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Milk Fever and the Nervous Forms of Distemper and Hysteria in Dogs.

Part II. The Nervous Forms of Distemper and Hysteria in Dogs.*

By A. Spicer, F.R.C.V.S., Oxted.

It will have been noticed that a dog will often eat ravenously in between fits, and how often fits will start just as a dog begins to improve and you think the case has begun to mend—and the same thing is met with in chorea. This suggests that, owing to the presence of food in the stomach and intestines, an undue proportion of blood will pass to the vessels supplying the intestines,and these, being in a weak condition, dilate under the pressure and are unable to pass it on, thus simulating the condition of the vessels in the cow's udder during milk fever.

The author has distinct recollections of two cases of chorea in which the twitching very definitely set in after the dogs had been subjected to very severe exercise too soon after recovery from distemper, and in those cases it would seem that the blood was diverted to the skeletal muscles at the expense of the other organs.

A large number of sporting dogs are attacked with hysteria when only with the guns, and it may be suggested that the exercise in these cases has the same effect.

The suggestion that the nervous forms of distemper might be due to blocking of the vessels of the brain by the agglutinated protein particles, or gelation of the same, probably arose from a study of papers on sleeping sickness in dogs and books on encephalitis lethargica and acute poliomyelitis in the human subject, for in "Epidemic Encephalitis," by Arthur J. Hall, it states, under the heading "Microscopical Changes in the Blood Vessels": "The virus shows its most arresting changes in the reaction of the blood vessels. These are both vascular and perivascular and occur chiefly round veins of a certain diameter, above all round precapillary veins. The vein is surrounded by a sheath of varying thickness consisting of deeply-stained neuclei of a round appearance.

"This perivascular cuff is a regular phenomenon. In those places where the change is most marked, almost every small vessel has a smaller or larger cuff of small round cells."

Buzzard and Greenfield give reasons for thinking that these cells may be not leaving, but returning to, the affected vessels.

It has been shown by Captain Pugh that in sleeping sickness in dogs the changes are identical.

The lymphocytes collecting round the vessels would seem to suggest that the agglutinated particles amount to a foreign body and that the lymphocytes are endeavouring to get through the vessel wall with the object of removing the accumulation.

In applying the theory propounded in the first part of this paper on Milk Fever, the first problem was the intravenous injection of, say, from 100 to 250 cc. of normal saline solution into the veins of a dog, and in general practice this did not seem feasible, so it was decided to make a start by trying a subcutaneous injection, and the first few attempts were made with a gravity tube, but this proved to be a slow, tedious process, so the next attempt was made with the late Sir Stewart Stockman's abortion syringe, which holds 50 cc.; this acted perfectly and it was found that the fluid would be absorbed in as short a time as two hours.

The first opportunity of trying out this theory occurred on the 1st April, 1928, on as serious a case as one is ever likely to meet and, as the dog looked like dying in twenty-four hours in spite of any treatment, it did not matter what experiments were tried. A Labrador retriever, about eleven months old, had a meal at one o'clock and at two o'clock started having fits and wandering round the room, running into the furniture and appearing quite blind. When seen at 4-30, he was lying on the floor having fit after fit; saliva was flowing from his mouth and he could hardly stand.

He was given an injection of 250 cc. normal saline, and potassium bromide (20 gr. doses) was left to be given at intervals of two hours if the fits continued; owing to a misunderstanding five doses were given, starting two hours after the injection.

April 2nd. Much better, feeding well, walking in circles, could hear, but still walked into the furniture, no more fits; gave another injection.

April 3rd. Still improving, one slight fit, walks straighter and is more intelligent.

April 4th. Had had another fit but was still improving; gave another injection.

April 5th. Had an extremely bad fit and was badly shaken, but had improved otherwise. The bromide was recommenced, 20 grains being given every three hours—four doses in all.

April 6th, 7th, 8th, 9th. Continuous improvement, sight gradually returning.

May 3rd. Dog holds his head on one side, but is otherwise normal.

October 23rd. The dog is perfectly normal save for being blind in the right eye, but the pupil reacts to light.

From the other cases it will be seen that the injection of normal saline is not sufficient by itself and that potassium bromide must be given as well; this was not realised at first and was only definitely settled when the treatment of hysteria was undertaken.

It will be well to state here quite definitely that this treatment will not cure distemper, as the nervous symptoms of distemper may be arrested but the dog will still die of the disease.

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This fact brings us to another very interesting point. Up to the present it has always been supposed that the nervous sequelæ of distemper (fits, paralysis and chorea) were caused by the direct action of the virus on the brain and spinal cord; although it was difficult to explain why, if the virus was always present in those two places, every case of distemper did not develop those sequelæ. Should this theory prove correct, the virus of distemper would only be the indirect cause, probably by producing derangement in some gland which governs the contractile power of the blood vessel, or by itself acting directly on the walls of those vessels under certain circumstances.

A résumé of the other cases is given at the end of the paper, and it seems best to give here the details of the treatment, dosage, etc., and some of the uncomfortable things that may happen.

A Fox terrier puppy, six months' old, will take 100 cc. and about 10 grs. of potassium bromide three times a day, and to make sure of a successful result the injection should be repeated on the fourth and eighth day, or perhaps at shorter intervals in bad cases. Labradors will take 200 to 250 cc., according to the severity of the case

A Cocker spaniel appears to stand a dose of 20 grs. of potassium bromide three times a day quite easily for four or five days and an Alsatian puppy of six months' old has taken 30 grs. three times a day for ten days on end, but there will probably be stumbling and swaying of the hind quarters, which passes off when the bromide is stopped, although it may take a week or a fortnight to do so. In every case the amount of saline and the dose of bromide must be left to the individual practitioner and he will gain his experience as he goes along.

So far it has been possible to stop the fits in every case of distemper that has come to hand, though several of the cases have died from the disease.

We now come to hysteria. The number of theories as to the cause of this disease, which appeared so suddenly and spread over such a large area, are legion, the majority of them being childish in the extreme, and it is regrettable to have to state that members of both the medical and veterinary professions have subscribed to these theories. It would have been much more dignified and truthful to have said they did not know. Drawing an analogy from the result of this treatment on fits in distemper and attacks of hysteria, one may tentatively suggest that hysteria is due to an ultra-microscopic virus which attacks a large number of dogs, but the majority of them in such a mild form that it does not appear to affect them in any way, but, just as in distemper a certain number of cases develop the nervous type, so in hysteria a certain number develop the hysterical attacks.

This appears to be borne out by the fact that in a certain number of cases enquiry brings out the statement that the dog or dogs had not been doing too well before the hysteria started and it is constantly remarked how well the dogs do after they have had the injection, which seems to suggest that, in the case of hysteria, these injections have a curative value.

Allowing that hysteria is due to a virus, the constant passage through dogs appears to be increasing the virulence. At first it was usual for the dogs to have a few attacks, and then everything settled down. There were no deaths, and the disease died out in the winter of 1927-28. It started again in the summer of 1928; many more dogs were attacked, some of the attacks were followed by epileptic fits, the dogs showed signs of ill health and some even died of it. The disease has continued to break out right through the winter, and is very prevalent even now.

As you all know, a large number of these cases get well without any treatment, so it was not possible to decide what effect the saline and bromide had until a large number of cases had been treated. Up till now about three hundred cases have been met with, amongst them outbreaks in kennels and single cases that had been going on for months, and after the initial difficulties were overcome it gave just the same results as it did with distemper. The first few trials were made with the injection alone, but that proved a complete failure; the bromide was then tried by itself and that also failed, but as soon as the two were tried together results were obtained.

If cases are seen after the first fit, one injection and a few doses of bromide will put the dog right; there are, however, a certain number of cases that keep recurring at an interval of a week or so, and these are the cases that require a course of injections and bromide.

In this district, towards the end of the year, many dogs have had one or more attacks of genuine hysteria and then epileptic fits have commenced, and these in cases where one could almost certainly rule out distemper, and in some kennels hysteria and distemper have been in existence at the same time. Fortunately the treatment acted just as well in these cases.

If you will take the trouble to read through the cases you will notice that in September a bad patch was struck, and the results were not satisfactory, although in every case the fits were stopped.

These indifferent results seemed difficult to account for, as the treatment was carried out in exactly the same way. A smaller quantity of normal saline was tried and the bromide was given in smaller quantities or stopped altogether, but without getting any change, and the question arose as to whether these were cases of meningitis, but on November 8th a solution to the problem seemed to appear.

When the treatment was first started a warm solution was injected, but as a rush of cases came in, time was limited and there was no fire in the surgery, so a cold solution was used and as now distemper had stopped, hysteria was the complaint under treatment. The dogs were all healthy, strong and in good condition, and could stand the shock caused by the cold injection, also it was a warm summer and the stock bottles were kept on the window ledge facing south, but directly distemper started again, and the vitality of the dogs had been lowered by the disease, and the cold weather had reduced the temperature of the solution, the trouble started.

As soon as the cold solution was suspected, 250 cc. of a warm solution was given to Case No. 16. This unfortunate animal was my own property, and having had hysteria and distemper followed by chorea, had received a considerable number of injections and so a comparison could be made.

There were no after effects at all; the puppy was bright and lively the whole of that day, and next morning; also, beyond the prick of the needle, no pain was evinced whilst the injection was being given.

This wasted a lot of time and was a silly mistake on my part, as if I had given the slightest thought to the matter, I should have realised that injecting cold fluid under the skin would cause the tissues to contract, the fluid would require more pressure to drive it in, would take much longer to absorb and there would be a considerable degree of shock, especially in a dog that was really ill and weak.

In spite of giving warm injections, a few dogs show considerable discomfort for about twelve hours afterwards, and appear stiff and miserable, but it has all passed off by the next morning. This might be caused by giving the injection too quickly, or it might depend upon the amount of trouble to be overcome in the brain.

Taken as a whole, and making due allowance for the experimental stage, the treatment has given results never dreamed of at the commencement, but there was one respect in which it did not do all that was required of it, and that was in chorea. You will see there are seven cases quoted, Nos. 2, 10, 11, 15, 16, 18, 21—two complete failures (10 and 15), three cases (2, 11, 16) where the chorea was stopped at a certain point but could not be cured, and two cases (18 and 21) which responded completely to treatment.

Case 16 had been a great disappointment because she had been seen at the first possible moment, and if the treatment had been right she ought to have been cured quite easily, but something was wrong somewhere. After she had been tested with the warm solution up to November 16th and that was found to have no ill effect and was probably beneficial, it was decided to test the bromide and see what effect that had.

When she had hysteria she received 30 grains three times a day for a week with no ill effect. On this occasion she received the same quantity from the 16th to the 21st, when it had to be stopped because the bitch was going all to pieces. She continued getting weaker until December 1st. This pointed to bromide as being the source of error, and when Case 10 came in, it was decided to treat it with the injection alone, with extremely good results.

Up to the present every case had been treated as though it was caused by agglutination of the protein particles, but chorea is quite different from fits, and it was thought best to see whether gelation or true solution of the protein particles might not be the particular phenomenon one had to deal with.

If you have read the quotation from McDonagh, you will remember he says: "When protein particles are being subjected to dehydration, they do not follow one another like sheep. While some are being driven into true solution, others resist the process and either join together (agglutinate) or increase in size." He further states that when they agglutinate you get fits, amongst many other things, but if gelation and dehydration are the prominent features, then you may get venous thrombosis, and insulin is the drug recommended. There are cases of distemper in dogs where you will first get two or three fits due to agglutination; for some reason they stop and chorea sets in, which suggests that finally gelation is the dominant factor.

On December 1st, No. 16 received 0·3 cc. of insulin and the same dose on the 3rd, and on that date the bitch was swung by the hind legs from a trapeze for ten minutes and this was continued until the 14th, when it had to be discontinued because it was injuring the eyes. The improvement, whether due to the insulin or the swinging, was very marked as the bitch rapidly regained strength and control of the limbs, but there was no alteration in the chorea.

The object of the swinging was to get the blood from the body into the head and dilate all the blood vessels, on the lines of Bier's hyperæmic treatment.

On the 17th, 21st and 25th she received 0·4 cc. of insulin, and although the bitch seemed to regain her full strength, there was no change in the chorea.

At the same time Case 2 was given 0·5 cc. of insulin once a week and received five doses in all; at times the chorea seemed better, but at others there was no improvement; the general health improved a great deal, he was much brighter and stronger and whereas previously he had been very tired after his walks, now he shows no evidence of fatigue, also he is ready to eat at any time and before he would only eat at nights.

Case 21 now came in and the combination of normal saline and insulin gave perfect results.

Case No. 16 had also about this time received a course of four simultaneous injections of normal saline and insulin but the chorea showed no improvement.

This would suggest that in an old-established case of chorea there is permanent venous thrombosis of some small vessels in the brain which cannot be overcome by the normal saline, and that in those cases in which recovery takes place in the course of a year or two, recovery is due to a collateral circulation being established.

If the injection of normal saline is given early in the case it would seem to prevent the vessels getting blocked.

An interesting point arises from this. In fits bromide and normal saline affect a cure by acting supposedly as dehydrators and breaking up the agglutinated protein particles. In chorea, judging by the experiments carried out on Case 16 and the result obtained in the other cases mentioned, bromide is contra-indicated and insulin and normal saline appear to affect a cure by acting as hydrators and preventing the protein particles from breaking up and passing into true solution. But the normal saline surely cannot act in both ways. What is the real action of the normal saline? Does it really simply replace the blood that has been drawn to another part? Does it dilute the blood plasma in some way or wash away toxins in the blood? The real answers to these questions are of great importance.

Another query is: What effect would this treatment have on true epilepsy, either in the human being or in dogs? So far, I have only tried it on one dog and the time that has elapsed is not sufficiently long to enable me to say.

In conclusion, one would like to point out that there are two diseases in man that appear to resemble distemper in one particular respect, *viz.*, that in an outbreak

many individuals may suffer from the complaint without the peculiar symptoms of that disease becoming manifest. These two diseases are encephalitis lethargica contageosus and acute poliomyelitis, and it would be interesting to know whether this treatment would have any effect on them. I have never had the luck to see a case of encephalitis lethargica in the dog, but if I do it will be the first thing that I shall try. Normal saline and bromide would seem to be indicated in this disease, but anything resembling the paralysis seen in acute poliomyelitis would suggest normal saline and insulin, as I have had two cases of paralysis that were sudden in onset, and without any history of an injury, that have responded to this treatment.

To summarise: It is necessary to take the two papers, "Milk Fever" and "The Nervous Forms of Distemper and Hysteria in the Dog" as one whole. The first portion develops the theory and the second sets out to prove it in practice, although unfortunately it has to be done on a different animal. The one idea in this paper is to find a cure for fits, chorea and hysteria—with what success time alone will show, but no attempt has been made to apply the subcutaneous injection of normal saline as a cure for, or as an adjuvant in the treatment of, distemper, although by observing the results of the injections one is forced to the conclusion that it does benefit these cases in some way and it would appear to provide a complete cure for the disease called hysteria.

CASES.

Case 2.

A Golden Retriever started distemper on March 11th, and was attended by an unqualified man. Chorea started on March 27th in the temporal muscles, gradually spreading to the lower jaw, front legs, costal muscles and hind legs.

April 10th. I was called in and gave the first injection and 20 grs. pot. brom. three times a day.

April 12th. The twitching had left the limbs and costal muscles and was confined to the head and jaws. Gave second injection, after which the dog was very restless up till late at night.

April 14th. Chorea about the same; dog stronger but not feeding too well. Injection not repeated, in view of the restlessness produced by the last injection.

April 16th. Gave third injection; dog feeding better; there were intervals when the dog did not twitch.

April 18th. General health improving.

April 21st. Still improving; chorea about the same.

May 1st. Twitching in the head and jaws, but nowhere else. Bodily condition very good.

October. The condition is the same as in May, but the dog is in good health and spirits.

Case 3.

April 25th. Cocker Spaniel. Had a very slight attack of distemper; had difficulty in getting up on the night of the 23rd, was worse on the 24th and kept moaning during the night. When sitting he raised his hind quarters very slowly, and then did not walk well, and the right leg kept slipping on the linoleum. Gave injection.

April 26th. The dog was restless the previous day and got a little worse at night, but in the morning was perfectly well.

April 27th. Improvement maintained, but the dog showed a little weakness when he got tired at night.

No further treatment.

Case 4.

Roan Cocker Spaniel. Had a fit ten days previously, with slight chorea, and had had three since and one just before I was sent for.

April 27th—3-30. Dog was wandering round the room, whining, knocking into things and falling over and would not keep still for a minute, and struggled if held. Gave injection 250 cc.

6 o'clock. Dog had settled down quietly in his kennel and was sleeping. Came when called and appeared perfectly sensible; pain was gone, all the injection absorbed, no tendency to wander. Gave pot. brom. 20 grs. three times a day. Still twitching in back leg.

April 28th. Dog normal.

April 29th. Gave second injection. Dog doing extremely well.

Case 5.

April 30th. Same kennel; another Cocker had been having a fit of hysteria every night for three nights, so gave injection.

May 2nd. No further trouble.

Case 6.

July 1st. Same kennel; one puppy had a fit, and two others attacks of hysteria. Gave injections and pot. brom.

July 5th. Repeated injection on puppy with fit. No further trouble with these three.

July 6th. Another puppy had a mixture of hysteria and fits. Gave injection and pot. brom.

July 11th. No further trouble.

Case 7.

March 7th. Attended a Cairn puppy for what I diagnosed as distemper, also on the 10th, 14th and 15th.

March 24th. The puppy was completely paralysed in the hind quarters, and it was spreading to the front legs; the paralysis had been coming on for several days.

Gave injection, which was repeated on the 26th and 28th. After the first injection the paralysis did not spread and gradually left the fore part.

May 1st. The puppy began to regain the use of the hind legs.

May 10th. Walking well.

Case 8.

April 20th. Attended a Sheep Dog puppy for distemper up to May 7th, when the case was dismissed as cured.

May 10th. Puppy had a fit, gave injection and pot. brom., 20 grs.

May 12th. Puppy perfectly well; no more fits.

May 21st. Had another fit.

May 22nd. Had two more fits. I was away from home and the owner became frightened and had puppy shot.

Case 9.

June 14th. A Corgi Welsh Sheep Dog, about eleven months' old, had been ill about three weeks before and apparently recovered, but had a relapse on the above date and improved steadily until the morning of the 18th, when he had a fit.

Gave an injection of *slightly warmed* solution and pot. brom. Dog was very stiff all day and did not feed until the evening.

June 19th. No more fits and had got over his stiffness.

June 21st. Dog improving; no fits.

June 23rd. Bright and lively, feeding well and putting on flesh.

June 25th. Dog began to get restless, and would not settle anywhere.

June 26th. Owner rang me up as the dog was getting worse. There was nothing definite but the dog was not so well—always on the move, and I thought there was a tendency to go in a circle to the right. Gave another injection.

July 6th. Dog has shown no further signs of restlessness and appears perfectly well.

Case 10.

June 19th. Mongrel Terrier, about nine months, seen and treated for distemper on May 21st, but the owner was unable to give the medicine as the dog was difficult to handle.

Developed weakness in the hind quarters on June 16th. and chorea on the 18th, and was gradually getting worse when I was called in on the 19th. Temporal muscles twitching, lower jaw and shoulder muscles jerking, losing control of the hind quarters. Gave a *cold* injection and pot. brom.

June 22nd. Chorea not so bad, but the dog is paralysed all over, drinking and eating well; gave second injection *cold*.

June 25th. Feeding well but paralysed all over; chorea no worse, but owing to circumstances the dog was destroyed.

CASE 11.

June 19th. Cairn Terrier puppy treated for distemper.

June 20th. Seemed to have an occasional twitching of the temporal muscles; not feeding, very weak.

June 22nd. Definite twitching of the temporal muscles and very weak, but feeding well and drinking milk.

June 23rd. Twitching more marked, bodily condition stronger. Gave *cold* injection.

June 26th. Much better; chorea, if anything, less marked.

July 7th. Puppy going on well; chorea less marked and has not spread.

CASE 12.

September 14th. Golden Cocker, had several fits on the 12th, also on 13th. A typical case of distemper; dog feeding ravenously in between the fits. Gave *cold* injection and ten grain doses pot. brom.

No more fits that day, but several more on the 15th, so increased dose to twenty grains.

September 16th. Dog was wandering round the room and did not like being touched, and appeared blind. Gave second injection, also *cold*. Bromide continued.

September 19th. Dog not wandering so much and inclined to sleep more. Still blind and nervous at being handled; gave third injection *cold*.

This dog was making steady improvement when I last heard of him.

CASE 13.

Hysteria. A Field Spaniel and an Alsatian had had several attacks of hysteria at odd intervals.

October 2nd. Injected both dogs with *cold* solution and gave bromide. Owner rang up the same evening to day the Spaniel was very stiff and exhausted all that evening; the bromide was stopped. The Alsatian, although not so upset, was sick, and the bromide was cut down to 15grs.

October 6th. Injected both dogs again, but with smaller quantities. The Spaniel was rather stiff and it soon passed off. The Alsatian showed signs of paralysis the next day, dragging the front feet and rolling the hind quarters. Was rather better the next day, but improved very slowly over the next ten days. The quantity of bromide given to this dog was very small.

November 22nd. Neither of these dogs had any further attacks of hysteria, and the Alsatian is perfectly well and has put on flesh.

CASE 14.

Distemper, or Hysteria. One Spaniel puppy, one Poodle puppy, one aged bitch Spaniel.

September 16th. The Spaniel had hysteria and was treated as usual; nothing more was heard of it until

October 7th, when he had eight fits one after the other and on the 8th, the two other dogs had similar attacks.

October 9th. All three dogs were injected *cold* solution and put on to bromide. They were a little stiff but otherwise did well.

October 13th. All three were injected again, *cold* solution.

October 15th. The two older dogs began to wander about and the bitch was falling over and showed distinct loss of control.

October 17th. The fits had stopped after the first injection, but the two older dogs were still wandering about and the bitch did not like to be touched. Stopped the bromide and gave stimulant.

October 19th. The dogs were still wandering, but the poodle to a much slighter extent. The bitch was partially blind.

October 21st. The bitch was, if anything, worse, and had to be destroyed. The poodle gradually improved; the puppy did well and showed no ill effects from the treatment.

CASE 15.

Two Cocker Spaniel puppies, eight months' old, had suffered from distemper for about seven weeks, when the bitch developed fits and the dog chorea which, when I saw him, had been coming on for three days.

October 26th. Gave *cold* injection, 150 cc. each and pot. brom. 10 grs.

October 31st. Dog—chorea was worse and the dog was very weak; bitch was wandering, did not see well, and did not like being handled. Gave second injection and stopped bromide.

November 4th. Dog—chorea had spread and dog was helpless; bitch was worse and weaker, but the fits had stopped after first injection. Started bromide again.

November 10th. Dog died this morning. Bitch a hopeless case.

CASE 16.

October 21st. Alsatian bitch, eight months old, started distemper on the 3rd September. Showed slight jerking of the head after coming in from exercise just about 8-30 a.m. The jerking was worse at 12-30, when a *cold* injection of 200 cc. was given, and pot. brom., 20 grs. was started. Dull and quiet all that afternoon, and next morning was stiff and not inclined to come out.

October 25th. Second *cold* injection; slight inclination to roll as she walked and was quiet and stiff for the next twenty-four hours.

October 29th. Third *cold* injection; bitch was still weak; chorea no better and no worse. Bromide was given for one week; weakness began to pass off November 7th.

On the 8th November the *cold* injection became suspect, so to test the matter on

November 9th, the bitch received 250 cc. of a solution at body temperature, and again on the 12th and 16th, and there was not the slightest reaction at any time. She was always bright and lively and improved steadily in general health.

CASE 17.

Golden Retriever puppy, four months' old.

November 10th. The puppy had five fits during the day and was carried to the surgery. Temp. 104°F., discharging from eyes and nose and could hardly walk.

Gave 200 cc. warm solution and pot. brom. 10 grs. Two fits on the 11th and one fit on the 12th, so the pot. brom. was increased to twenty grains, three times a day. No reaction to the injection.

November 14th. No more fits after the 12th. Puppy running about and feeding well. Gave second injection 200 cc. warm solution.

November 18th. The puppy is in excellent health and spirits and no further treatment seemed necessary.

CASE 18.

November 29th. Large Golden Cocker. Tem. 103°F., pus and conjunctivitis in one eye; not feeding and thoroughly dejected.

December 1st. Dog about the same; chorea had started very slightly the day before and was worse to-day in hind legs and shoulders. Gave 200 cc. warm injection.

December 3rd. Dog had seemed nearly normal on December 2nd, and twitching had stopped, but had been stiff and miserable all day on the first. On the third the dog was not quite so bright, and owner said there was very slight twitching, although I could not see it; temp. normal, dog feeding well.

December 5th. Dog absolutely normal; gave another injection as a precaution; health has been good ever since.

CASE 19.

December 8th. Pekingese, had not been well for some time and was not getting on. Temp. 104°F., eyes inflamed and discharging; probably distemper.

December 10th. Owner rang up to say that the dog had had fits during the night and had been barking and pushing its head into the corners of the rooms. Had partially lost control of hind quarters. Gave injection and bromide.

Owner rang up next morning to say the dog had not had any more fits and was improving.

December 13th. Dog much better and feeding well and was normal except for slight weakness in hind quarters. Gave second injection and continued bromide.

Uneventful recovery.

CASE 20.

February 14th. A black Cocker puppy, four months' old, about ten days before had given a slight yell as though hurt and went and sat in a corner for about ten minutes looking frightened. After that appeared perfectly well. Early in the morning before 8 o'clock had a fit. When seen about 10 o'clock was slobbering, twitching all over, wandering about, and inclined to run into things.

Gave injection and left bromide, with instructions that it was only to be given in case of fits, as the fits came on again.

The puppy was given 4 by 10 grain doses of bromide during the day; the fits stopped at 5 o'clock and the puppy had no further trouble. The twitching stopped during that night and by the 16th the puppy was normal.

CASE 21.

February 13th. A Field Spaniel was brought to the Infirmary, twitching badly all over the right leg and shoulder and muscles of chest; the twitching had started on the 9th and showed signs of spreading. It transpired that the dog had had sickness and diarrhœa about a week before and had been out of sorts and dull for about three days. Treatment: normal saline 250 cc.; insulin 0·5 cc.

February 17th. The twitching was much less marked. As I was away and my assistant had no instructions, the dog received normal saline 250 cc. and no insulin.

February 21st. The twitching had stopped entirely for two days. Normal saline 250 cc. and insulin 0·5 cc.

CASE 22.

A Fox Terrier bitch, about two years old, had been suffering from distemper for an indefinite period and was showing some pneumonia.

On March 9th, 1929, it developed generalised chorea and when seen on March 12th this was well established. One hundred cc. of normal saline was injected and 0·5 cc. of insulin given. When seen again on March 14th the twitching had practically stopped and when asleep there was nothing whatever to be seen.

DISCUSSION.

Mr. HENRY GRAY, who opened the discussion, congratulated Mr. Spicer on his learned dissertation and on the lucid facts which he had placed before them.

He thought that he (Mr. Gray) was the first man in this country to use saline solution in the treatment of distemper of the dog, and he found it to have a very beneficial effect. He believed that the first mention of it in the veterinary literature of this country was in the article he wrote in 1906 for Wallis Hoare's *Veterinary Therapeutics*. He had never used insulin, but he had used oxygen, with similar effects to those recorded by Mr. Spicer.

Mr. Spicer had referred to the fact of dogs having fits after eating—a dog that had lost his appetite in distemper having fits when he began to eat. That was not peculiar to the dog; it was also known in horses and in the human being, especially in puerperal septicæmia, and also in spotted fever. A young man with the latter disease, who had been off his food for some time, would pray for a meal. It would be given to him and in two or three days he would be dead.

The essayist mentioned about paralysis; in his (Mr. Gray's) experience the majority of cases of paralysis in the dog would get perfectly well if they adopted rational treatment; if they wanted to make them incurable let them use strychnine and all the classical treatments. As to chorea, he did not mind it, provided it was not a progressive or generalised chorea. If it was not, they should have patience and they would recover not from the chorea but from distemper. He once saw a dog that had chorea that passed into paralysis and the animal was well in a week. He had seen dogs recover after five years of chorea, on the other hand. The larger part of the modern treatment of disease was mere fashion; let them look back into the various treatments introduced for the diseases of mankind and animals—how many of them lasted for many years? Very few. They were now all reverting to the treatment of their forefathers—*vix medicatrix naturæ*. He had seen a great number of dogs with the nervous symptoms of distemper, locomotor ataxy, etc., get well without heroic treatment.

They had heard a good deal about the treatment of spotted fever. If they studied the remarks of the physicians who treated that disease in Ireland forty or fifty years before the War, they would find that those men had just as good results as they had now, with their scientific treatment. The only thing that had progressed in our time was the treatment of milk fever—we used air now, and the treatment was thus not so violent.

There was a good deal of talk about insulin. Insulin was not a cure, it was only a palliative, and a good many patients got well without it. It was just like the thyroid treatment of myxœdema—as soon as it was left off the patient would go back.

How did Mr. Spicer know that hysteria was due to a virus? Had it been put to the test? That was merely another theory based on imagination. He had seen hysteria in dogs all his lifetime, though it was only in the last few years that it had occurred epizootically in this country. Our French friends investigated hysteria before some of them were in the profession. To his mind they solved the question, but so many other complaints had been mixed up with it. He treated the ears and then left the dogs alone, and they did not come back again to be treated for hysteria.

Mr. W. PERRYMAN asked Mr. Spicer where he injected the saline solution. It appeared to him to be rather a bold procedure to give such a quantity as 200 cc. and he could imagine most dogs showing a good deal of discomfiture. Also, how long did it take to inject that amount? He thought it must be rather a difficult matter to get as much fluid as that under the skin.

Professor G. H. WOOLDRIDGE expressed his regret that he was not in for the earlier part of the paper, and he did not know how much he might have missed, but certainly he was very interested to hear Mr. Spicer's line of treatment in that nervous condition—whether it was that accompanying distemper, or that other condition which had been called hysteria.

He was rather struck, in some respects, by Mr. Spicer's explanation of the etiology in the light of the results that he had got. As to the comments of Mr. Gray, it was of course their common experience that most of the cases would recover if they were put into conditions where quietude and the absence of interference were observed. That Mr. Gray might take as an example of his *vis medicatrix naturæ*, but he thought it was rather more than that; whatever might be the original cause, if a condition of frenzy existed it was quite a natural thing to understand that quietness in itself was of value, but if they could intensify it by the administration of sedatives, such as bromide, that would help matters. He preferred to combine with the bromide, sodium salicylate, as he thought by that combination they got rather better results in producing a sedative effect upon the nerves, while it also allowed of some reduction in the dose of bromide. He made no complaint of the doses of bromide recommended by Mr. Spicer; in fact, he usually exceeded them even in combination with sodium salicylate, and his doses of bromide were much larger than those of Mr. Spicer when given alone. Where he was a little concerned was this: his best results had been obtained by starting off with the administration of a smart purgative, and the effect of the purgative action was to depress the circulation and blood pressure and it was a cerebral depressant. By giving a saline injection one was increasing the pressure and the two lines of treatment did not seem quite to coincide. He did not know if anything was said in the early stages of the paper with regard to the treatment of milk fever in the same way, but he took it that Mr. Spicer had an idea that there was some analogy between the sets of nervous symptoms that were produced

in the two affections. He did not know that there was any need for that line of treatment in the case of milk fever, in which such excellent results were obtained with the present-day method.

With regard to the use of normal saline under the skin he was one of those people who thought it was not employed anything like sufficiently often. In many bacterial infections the trouble was due to toxins which had to be eliminated, and the injection of normal saline into the veins or subcutaneous tissues did stimulate the elimination of the various waste products and toxins through the urinary tract, as well as through the alimentary tract: therefore he thought that was a line of treatment to be advocated. That method of lavage had been carried out perhaps more extensively on the continent during past years than in this country, and he thought they might use it much more frequently. The great secret appeared to be the slow injection of the saline, so as not to cause over distension of the fibres of the connective tissue of that part, productive of their rupture. If the injection was carried out too rapidly it caused a lot of injury in the connective tissues of the part, with severe swelling remaining sometime afterwards. Although they were still in the dark as to the causation of that condition of so-called hysteria and it could only be a matter for surmise, he was of opinion that experience pointed to it being an infective condition. As Mr. Gray was well aware, he had no support to give him when he suggested that it was in any way due to ear trouble. While admitting that they would and did get nervous symptoms resulting from external ear trouble, he thought that condition was so fundamentally different that it was not in any way associated with ear trouble.

He should certainly give Mr. Spicer's method of treatment a trial, and he should hope to get more rapid results than he had been able to get up to the present, in particular in those cases of nervous troubles following distemper. With Mr. Spicer's experiences, as he had recorded them and detailed them that night, one had more than conjecture to go upon, and he, for one, was prepared to give his method a trial.

He should like to thank Mr. Spicer for the material he had put before them and for the original way in which he had dealt with his subject. (Applause.)

Major H. KIRK, in response to the President's invitation to speak, remarked that he had very little to say on the subject, but he would certainly very much like to congratulate Mr. Spicer on his excellent paper, which had greatly interested him.

He desired to say that he thought that there was a good deal of truth in what Mr. Gray had said about the treatment of distemper, for one could get a number of cures by, he would not say doing nothing, but by instituting conditions of good hygiene and keeping an animal warm, clean and well fed. He had treated these cases in both ways, with no great difference in the results achieved. Mr. Gray spoke of the use of oxygen and Professor Wooldridge had told them that if they gave their saline injections too quickly they might cause some structural damage beneath the skin. When one gave oxygen one did not take two hours over it: he usually injected all he desired in five minutes and did not seem to do any harm by so rapid an injection. The gas usually took from 24-36 hours to disappear and then more oxygen was given.

It occurred to him, when Mr. Spicer mentioned about the necessity for giving such a huge amount of saline, whether its good effect might be in some way dependant upon distension of the skin and a consequent compression of peripheral vessels, much in the same way that distension of the skin was produced by introduction of gas. He supposed it could not act in the same way, but for a moment there appeared to be some analogy between the two things—whether it might be distension that, in some way, produced the effect.

As regarded potassium bromide, he never secured very good results from its use. In hysteria he nearly always used Parke Davis and Co.'s compound capsules, containing chloretone, belladonna and potassium bromide, and they were certainly very efficacious. He gave the owners three or four of these capsules to take away, and frequently there was no recurrence of the attack of hysteria. Of course it was possible that there would not be, in any event. He combined with that, keeping the dog in a quiet, cool, darkened room, giving a purgative and instructing the owners not to excite the dog in any way. He did not remember having had any deaths from canine hysteria, though in other parts of the country it had seemed to be a very fatal disease.

Professor J. MCCUNN said that Mr. Spicer's paper was a very interesting one and was no doubt the result of work that he had done. There were, however, two points concerning it which struck him as rather strange. One was that the author stated that dogs suffered from sleeping sickness. So far, he had never seen a dog which he could say was suffering from sleeping sickness—at any rate, as he had seen sleeping sickness as it occurred in humans.

Dr. HARE: "Sleepy sickness is described by Pugh."

He (Professor McCunn) was afraid that our members were a little too apt to read a medical book and immediately see the same disease in animals. That was a grave fallacy, because his experience of the two subjects—and it was fairly considerable on the clinical and the pathological side—was that the general principles were the same, but the diseases, especially the specific diseases, were entirely different, and when a person talked about sleepy sickness he thought one understood that he was describing a disease of dogs which resembled sleeping sickness in humans. In humans sleeping sickness was rather uncommon and he was sure that sleeping sickness, as it was known amongst people, was not seen in dogs.

Another point was that Mr. Spicer had said that one of the good things that resulted from his saline injection was dehydration of the tissues. He (Professor McCunn) thought it would be rather the opposite: as far as he knew, dehydration occurred in chronic diseases and was one of the causes of death—probably, *the* cause of death, and in a good many cases one could observe, macroscopically, that the tissues were dehydrated. He would rather say, therefore, that the thing which helped in a saline injection was the fact that one got hydration—you got more fluid put into the tissue and so you helped the animal to resist the disease.

THE REPLY.

Mr. A. SPICER, first replying to Mr. Gray, who opened the discussion, said that he did not know whether that gentleman meant them to take his remarks really seriously, but he was dealing therein more with the general treatment of disease, whereas the paper was simply concerned with the nervous forms of disease. Mr. Gray had suggested that oxygen was similar in action to insulin; this was so, but so far he had not had good results with oxygen.

Mr. Perryman wanted to know where the saline would be injected and how much. He (Mr. Spicer) was afraid that he did not inject it slowly; in fact, there was no difficulty, if one wanted to do so, in getting 250 cc. into a dog's skin in under five minutes, and if one had got the saline at about body temperature the dog did not seem to be inconvenienced in any way. When it was given cold the animal sometimes cried out, but that never happened with a warm injection of the saline, when the only thing noticeable was a slight twitching of the skin. He put it in on one side of the middle line of the back, and within two hours the bulk of it was absorbed and the swelling worked down gradually to the lower portions of the chest. Three injections were given and a fresh site should be chosen for each. The second injection was made on the opposite side of the middle line to the first, and for the third he reverted to the original side.

Professor Wooldridge had said that these nervous cases would get well with bromide and quietude—they all knew that. He had an Alsatian bitch of his own which suddenly started one of those attacks. She rushed once round the house, came back and the fit passed off. She never had another attack and she never received any treatment at all. On the other hand, a kennel of fourteen Cairn terriers had been having fits the whole of the summer and the lady owner was absolutely in despair. She heard, through another lady, that he had been applying that treatment and within a fortnight the whole thing was wiped out, and she had had no further trouble whatever. It was in such cases as that that one seemed to get proof of the value of the treatment. There was this fact about it—as a rule, one got four or five attacks of hysteria in a dog, but if they used that treatment they might get a slight attack shortly after the treatment, before it had taken full effect, but one would not get any attacks after that.

When one started on a new thing, such as that, one often used it in any case that came along, and he must say that in certain cases of influenza, showing weakness of the hind quarters, sickness and diarrhœa, after he had injected the saline, and perhaps insulin, the temperature had fallen and the dog had got completely well—the slight paralysis and the weakness had passed off immediately. Of course Mr. Gray would say that was simply Nature effecting a cure, but if one repeatedly achieved cures by the means he employed, it made one feel that there must be something in the treatment after all.

Concerning the proportions of the normal saline—distilled water was an awful nuisance, because it must be fresh and kept in closely-sealed bottles. He used boiled water and Burroughs Wellcome forty-grain tablets, mixing up a Winchester quart at a time. This he kept as a stock solution and he could call to mind the formation of only one abscess at the site of injection during the whole of the time he had practised the method, and that occurred in the early days; he did not know why.

Major Kirk wanted to know if the distension gave the effect. He hardly thought so, because he did not think one got the same results with distension when one gave oxygen, but there was a chance for Major Kirk to try that and see, and he could let them know the results. He also mentioned giving Parke Davis and Co.'s capsules, but chloretone had such a tendency to make the dog go absolutely weak behind, and owners did not like that—they got nervous and frightened. That had been his objection to chloretone in the past, though he had frequently used it in fits.

In reply to Professor McCunn, he had never seen sleeping sickness, but Major Pugh, working with a medical man who was a great authority on that subject, sent the brains of dogs that died from this complaint to him, and they made complete sections through the brain and spinal cord, and this man, who knew the subject, when he put the human plate and the dog plate side by side, could not tell the difference. Major Pugh was getting all these cases and his practice was only ten miles from his, and yet he never had a case. As to the effect of saline: saline, according to McDonagh, was a dehydrator, because it broke up the agglutinating particles which became hydrated; but he rather endeavoured to show that saline did not act quite in that way, because he could not see how it could act both for fits and for chorea, which, as far as the little work put in on chorea showed, was a case of gelation; so it could not act both ways. He suggested that it had a separate action entirely and that was the mechanical one of putting more fluid into the rest of the tissues to make up for the blood that had, for the time being, got lodged in the intestines and other parts.

The Colonial Advisory Council of Agriculture and Animal Health.

The two departmental committees on the Colonial Agricultural Service and on the Colonial Veterinary Service each recommended the establishment of advisory bodies at the Colonial Office, and, in order to secure the necessary co-operation between the two services and to ensure that the whole field of veterinary and agricultural activities is covered and that no gaps are left between the fields of activity which are at present the concern of two separate departments in many colonies, a Joint Advisory Council of Agriculture and Animal Health was proposed. It is not anticipated that this council will find it necessary to meet very often, as the main work will fall upon the respective committees of Animal Health and of Agriculture.

The Joint Council would consist of the following members:—

Chairman (who should be a Layman),
The Chief Agricultural Adviser,
The Adviser in Animal Health,
The Assistant Agricultural Adviser,
The Chief Medical Adviser to the Colonial Office,
A representative of the Permanent Staff of the Colonial Office,
The Director of the Imperial Institute,
An Agriculturist with Tropical experience,
A Botanist,
An Entomologist,
A Mycologist,
An Animal Geneticist,
A specialist in animal nutrition,
A Chemist, primarily for soil science,
An Epizootiologist.

The Secretary of State for the Colonies has, accordingly, appointed the following members to this Council:—

Chairman, Mr. W. Ormsby-Gore, M.P., the Under-Secretary of State for the Colonies.

Vice-Chairman, Mr. F. A. Stockdale, C.B.E., the Assistant Agricultural Adviser, a Colonial agriculturist with considerable experience both in the old and the new world, who, until his recent appointment, was actively engaged in Ceylon.

Lieut.-General Sir W. Furse, K.C.B., D.S.O., the Director of the Imperial Institute since 1926.

Dr. G. K. Marshall, C.M.G., F.R.S., the Director of the Imperial Bureau of Entomology since 1923.

Dr. A. W. Hill, C.M.G., F.R.S., the Director of the Royal Botanic Gardens, Kew, since 1922, and a botanist with considerable tropical experience.

Dr. E. J. Butler, C.I.E., F.R.S., Director of the Imperial Bureau of Mycology, Kew.

Professor T. B. Wood, C.B.E., F.R.S., Drapers Professor of Agriculture, Cambridge, who is especially known to veterinary surgeons for his work on Animal Nutrition.

Dr. W. H. Andrews, M.R.C.V.S., D.Sc., Director of the Ministry of Agriculture's Laboratory at Weybridge.

Dr. A. T. Stanton, M.D., C.M.G., the Chief Medical Adviser to the Colonial Office.

Mr. R. V. Vernon, C.B., of the permanent Colonial Office Staff.

It is anticipated that both Sir John Russell, Director of the Rothamstead Experimental Station and a celebrated soil scientist, and Dr. J. B. Orr, the Director of the Rowett Research Institute, and an honorary member of the N.V.M.A., will also be appointed members. Mr. G. H. Creasy, of the Colonial Office, has been appointed Secretary.

It will be observed that some members of the Council have yet to be appointed, notably the Adviser in Animal Health and an Animal Geneticist.

NATIONAL VETERINARY MEDICAL ASSOCIATION.

Ayr Congress.

31st August—6th September, 1929.

PROVISIONAL PROGRAMME.

SATURDAY, 31st AUGUST.

2 *p.m.*	Council Meeting.
3-30 *p.m.*	Forty-seventh Annual General Meeting. A meeting of the Scottish Branch, N.V.M.A., will be held at the close of the Annual General Meeting.
Evening.	Social Gathering—Western House.

SUNDAY, 1st SEPTEMBER.

10-45 *a.m.*	Meet at Town Hall and parade for Church Service in Old Church.
2-30 *p.m.*	Motor drive: Destination not definitely fixed.

MONDAY, 2nd SEPTEMBER.

9-30 *a.m.*	Official opening of Trade Exhibition by the President.
10-15 *a.m.*	Civic Welcome by Provost of Ayr and Convener of County Council.
11 *a.m.*	Paper: "Foot-and-Mouth Disease," by Mr. J. O. Powley. Discussion to be opened by Professor S. H. Gaiger.
2-30 *p.m.*	Outing to Banks o' Doon Tea Gardens, Alloway, at invitation of Ayr Town Council.
Evening.	President's Reception in Western House.

TUESDAY, 3rd SEPTEMBER.

10 *a.m.*	Paper: "Lameness," by Professor J. J. O'Connor. Discussion to be opened by Mr. J. W. McIntosh.
12 *noon.*	Congress photograph.
1-45 *p.m.*	Popular Lecture: "Tuberculin Testing," by Professor J. B. Buxton, in the Palais de Danse.
3-45 *p.m.*	Visit Craigie Mains Farm, Symington, to inspect Mr. James Kilpatrick's stud of Clydesdales.
Evening.	Arrangements not completed.

WEDNESDAY, 4th SEPTEMBER.

10 *a.m.*	Operations and Demonstrations in Cattle Market, Ayr.
4 *p.m.*	Demonstration on Meat Inspection at Public Slaughterhouse, Ayr.
Evening.	Banquet in Town Hall, Ayr.

THURSDAY, 5th SEPTEMBER.

9-30 *a.m.*	Paper: "Calcium and Phosphorus Requirements of Farm Animals and Effects of Deficiency," by Dr. J. B. Orr, Rowett Institute, Aberdeen. Discussion to be opened by Professor J. Russell Greig.
11 *a m.*	Paper: "Johne's Disease," by Major G. W. Dunkin. Discussion to be opened by Dr. A. Leslie Sheather.
2 *p.m.*	Motor tour: Girvan, Colmonell and Ballantrae.
Evening.	Free (Masonic Meeting).

FRIDAY, 6th SEPTEMBER.

10 *a.m.*	Paper: "Clinical and Epidemiological Aspects of the so-called Hysteria of the Dog," by Professor Hobday. Discussion to be opened by Major Frank Chambers. Followed by Closing Meeting of Congress.
2 *p.m.*	Visits to herds of pedigree Ayrshire Cattle.
Evening.	Whist Drive and Dance: Western House.

List of Recommended Hotels and Boarding Houses.

AYR.

Licensed Hotels.

1. Ayr Station Hotel (L.M.S.) terms from 20/- a day.
2. Hotel Dalblair, Alloway Street ... ... „ „ 18/- „
3. Hotel Berkeley, Barns Street (single rooms all engaged) „ „ 12/6 „
4. Ayrshire and Galloway Hotel, Burns Statue Square ... ... „ „ 16/- „
5. Burns Monument Hotel, Alloway ... ... „ „ 12/- „
   This hotel is 2½ miles from town at tram terminus, also good service of buses.

Private Hotels and Boarding Houses.

1. Blendon Private Hotel, Bellevue Road ... ... 12/- to 15/- a day.
2. Milrig Hotel, Charlotte Street 9/- „
3. Hotel Windsor, Alloway Place 10/- „
4. Beresford Temperance Hotel, Burns Statue Square ... 14/- „
5. Green Lodge, Charlotte Street 9/- „
6. Wellpark Boarding House, Miller Road ... ... 9/- „

   Bellisle Mansion House, Doonfoot, Ayr ... ... 10/6 „
   Bellisle is about 2 miles from centre of town, on bus route.

PRESTWICK, 2 miles from Ayr; excellent car and bus services.

Private Hotels.

Queen's Private Hotel, Esplanade ... ... 15/- to 18/- a day.
St. Ninian's Private Hotel, St. Ninian's Road ... ... 12/- „
St. Nicholas Private Hotel, Ayr Road ... ... 10/- „
Arranmore, Esplanade ... 9/- „
Beach House, Esplanade ... 9/- „

TROON, 8 miles from Ayr; 15 minutes bus service.

Licensed Hotels.

Marine Hotel ... ... 18/- to 21/- a day.
South Beach Hotel ... ... 17/- „

Private Hotels.

Craigielea ... ... 15/6 to 17/6 „
Mar Lodge ... ... 12/6 to 16/- „

TURNBERRY, 16 miles from Ayr.

Turnberry Hotel (L.M.S.) terms from 30/- a day.
Postal address: Turnberry, Ayrshire.

First-class hotel accommodation in Ayr is limited and early application is advised.

In addition to the above, excellent private apartments are available in Ayr and Prestwick and members preferring such should communicate with the Local Secretary stating their requirements. A. DOUGLAS, *Local Secretary*.
17 Wellington Square, Ayr.
January 29th, 1929.

The Veterinary Record.

30th March, 1929.

TROPICAL VETERINARY MEDICINE.

The interest aroused, not only among veterinary surgeons but in agricultural and medical circles, by the proposals of the Lovat Committee on the Colonial Veterinary Services shows no sign of abating. One of the most important of those proposals, and one to which immediate effect could be given, is the establishment in London of a Tropical Veterinary School. Accordingly, the following communication from a correspondent is not inapposite and draws attention to the fact that not only is the immediate creation of this School possible, but actually necessary if full advantage is to be taken of the existing facilities.

"In 1899, the London School of Tropical Medicine came into being at the Albert Docks, under the auspices of the Seamen's Hospital Society. The position in those days in human tropical medicine was analogous to that existing to-day in veterinary tropical medicine. Information as to diseases and their cause was scanty and often inaccurate: medical men went to the Colonies knowing little or nothing of the special diseases they had to treat and their experience was gained often at a terrible cost. It was to remedy this that Sir Patrick Manson set about the task of organising his now world-famous school. To its first classes twenty-seven students were attracted, but the numbers steadily increased, and by the outbreak of the Great War about sixty students attended each of its three annual sessions.

"In 1920, the school was moved to its present position in Endsleigh Gardens in the University quarter of London. Shortly after this the International Health Board made possible the creation of a large post-graduate Medical School in London, and with this the old London School of Tropical Medicine was incorporated. The new buildings necessary to house the London School of Hygiene and Tropical Medicine are now nearing completion, and the old school will move into its new quarters this summer. The rooms left vacant by this removal are those suggested by the Lovat Committee as a probable home for the School of Tropical Veterinary Medicine.

"Before its absorption by the new and enlarged body, the London School of Tropical Medicine was organised as a part of the Seamen's Hospital Society, partly, of course, in order to supply the students with the necessary clinical instruction. The staff consisted of a Superintendent, who acted as Director of Studies, assisted by whole-time Professors or Lecturers in Parasitology, Entomology and Pathology and by part-time visiting lecturers who had tropical experience. To assist the teaching a museum and library were provided, but practical instruction was an essential part of the students' curriculum and a certificate was granted to those who passed a satisfactory examination. Research, of course, played a prominent and necessary part in the functions of the School.

"The lines indicated as suitable for a School of Tropical Veterinary Medicine are similar to those found so successful in Manson's School. Like it, it would be a purely post-graduate institution, affiliated to the University. There would be a Director, who, in addition to his regular work on administration and so on, would teach Veterinary Hygiene. In the infancy of the scheme, however, it would probably be necessary for him to give special instruction in the application of the biological sciences in the tropics. Ultimately, this duty would fall on other members of the staff. There would be three main departments, each under a Professor, which would instruct in Bacteriology and Pathology, Parasitology and Entomology, and Physiology and Nutrition. Part-time lecturers would visit the school to instruct in special subjects.

"The School would provide facilities for a six months' course for newly-appointed Colonial Veterinary Officers, among others, extending from October to March, and would also conduct 'refresher' courses, for officers on leave, from April to July, while facilities for research would also be offered. This conception of the Tropical School seems to be an eminently sound one, and one which has been continually demanded by colonial veterinary surgeons, a considerable number of whom have already attended the old School of Tropical Medicine.

"In order to attract students and to provide those who have passed through the course with some outward and visible sign of their training, it is essential that there should be provided a Diploma in Tropical Veterinary Medicine. Accordingly, the early attention of the Royal College of Veterinary Surgeons to the framing of regulations for such a Diploma would be of considerable value, not only in focussing attention on the needs of our colonial services, but in accelerating the foundation of the School.

"The Committee suggested two possible sites for the new School. The availability of the first of these, the quarters of the Research Institute at Camden Town, is bound up with the future of the Royal Veterinary College, and until that is settled, nothing can be done. Moreover, it would entail the removal of the Institute of Animal Pathology. The alternative suggestion is that the rooms vacated by the old Tropical School at Endsleigh Gardens be rented. These will be available this year and would require only relatively minor alterations and comparatively little capital outlay before being brought into use. This would enable the new School to begin work next winter, in a central position, in the University quarter of London. But it is necessary to come to an early decision in this matter as unless prompt steps are taken to secure these quarters, it is certain that they will not remain long available.

"If this is done, there is no reason why the School of Tropical Veterinary Medicine should not come into being, in a small way, in October, 1929."

CLINICAL AND CASE REPORTS.

Some Interesting Cases encountered during the last Forty Years.*

By F. Booth, Sen., M.R.C.V.S.,
Old Colwyn, Denbigh.

Stifle Tumour, with Bone Nucleus, removed from a Pony.

The first case I wish to describe occurred in July, 1889. I had then just started practice at Poynton in Cheshire, and one day a farmer brought in a pony to be examined. He told me that he had bought the pony 2½ years ago, in order to breed from her, but he had failed to get her to breed. As she was too lame to work he decided to get rid of her, but called to ask my opinion about her first. He told me the history of the case and I then remembered the pony. She had belonged to a doctor in Manchester, and had had an accident in the street, being thrown down and injuring her near stifle. I was a pupil with Messrs. Greaves & Faulkner at the time, and we were called in to see the pony. We ordered her to be taken in a float to the infirmary, where she was put in slings and treated for several weeks. She was very lame when discharged, and the doctor decided to sell her for breeding.

When I saw her in July, 1889, she walked sideways, the off side appeared to go in advance of the near. She could not trot at all, but in walking when she put weight on the near hind leg a tense swelling showed on the outside of the stifle. This swelling felt like a piece of bone, and was about three inches in diameter. When the leg was flexed it could be moved about freely and gave no pain, but when weight was put on the limb it became tense and seemed to interfere with the movement of the stifle joint. I told the owner my opinion and advised him to let me remove it, as there was just a sporting chance of recovery. I proceeded to prepare for the operation by giving the pony an ounce of chloral hydrate and injecting cocaine around the swelling. When these had taken effect I cut from the top to the bottom of the swelling through the skin and underlying tissues down to the tumour. I then dissected the tumour out quite easily and with very little blood. I dressed the wound and stitched it up and put the pony in a clean box until next day, when she was sent home. She walked sound and quite straight. After a week's treatment in a box she was turned out for a while, then put to work in a milk float. Five years afterwards, Mr. Walker, the owner, called on me at Abergele, where I then lived, and said the pony had worked regularly ever since, and was still quite sound.

The tumour had a nucleus of solid bone, nearly three inches in diameter, and one inch thick in the centre. The outside was convex and the inside slightly concave, and the whole was covered with fibrous tissue.

Splint Devices in Off-fore Fracture.

This was a case of simple fracture of the off-fore leg of a hunter mare, about nine years old, the property of a farmer in Llandudno.

It occurred in June, 1891. When I saw her she was in a field on the side of the Great Orme, and had a foal, three weeks old, running with her. The off-fore leg was broken between the knee and fetlock joints. I advised the owner to have her put down, but he thought a lot of her and was very anxious to rear the foal, so he asked me to do what I could for her. I therefore got a timber merchant's three-leg and put her in slings. A stack sheet was placed over the top of the three-leg, the sides were pegged to the ground, and the ends left open for the foal to run in and out. I bound the leg up temporarily and got a blacksmith to take off the shoe, spread it out at the heels and make it longer. A hole was made in each heel to take an iron splint which went up to a ring, fitted round the leg just under the breast, the ring being packed with plenty of cotton wool and a bandage. The shoe was put on again (with some difficulty) and an iron splint bolted to the shoe on each side with nuts above and below the shoe. Before bolting the iron splint to the shoe, however, I set the leg as best I could with a wooden splint and pitch bandages, and having bolted the iron splint to the shoe I bandaged the leg to it with a figure 8 bandage from the coronet to the breast. The chief trouble afterwards was to keep the mare quiet, as she was very anxious about the foal. A man was therefore stationed with her night and day until she got used to the conditions. She made a splendid recovery, reared her foal, and, as she had been served before the accident, had another foal the next year. In fact she reared two or three more foals after. She never became sound enough to ride again, and having never been broken to harness she could not even work on the land.

I have treated two other broken legs in horses successfully since then, one in a foal and one in a yearling, in addition to many others unsuccessfully.

The Hunter and the Gorsewood Chip.

This case concerned a brown hunter gelding belonging to a gentleman who hunted with the Flint and Denbigh Hounds. One day in the winter of 1894 the hounds met at Coed Coch and ran a fox over the hills towards Llangerniew. Here, whilst going over a patch of burnt gorse, this horse slipped and fell sideways, luckily throwing his rider some distance from him. The horse got up immediately and bolted. He was soon caught, and on the owner going up to him he noticed some blood on his near quarter. I was hunting myself that day, and the owner asked me to look at the animal. He had a swelling about as big as one's hand and raised perhaps ¾ inch on a level with the point of the hip and midway between it and the root of the tail. A small punctured wound lay at the lower part of the swelling. I could not palpate it as the horse was always difficult to handle. He persisted in lashing out when one tried to touch his sides or quarters. I concluded that he had been punctured with a gorse stem, but was not much the worse for it, and I advised the owner to ride him on. I told him I would see him at home next day. This I did, and after getting on a twitch, and drawing the leg up we were able to feel the swelling. It felt just like a blood blister, and I therefore gave some weak iodine solution to paint it over, and advised him to be used as usual. He hunted all that season and was

* Paper presented to the North Wales Division, N.V.M.A., at Colwyn Bay, on 15th February, 1929.

turned out to grass for the summer. When brought up the following season the lump was still there, but quite six inches lower down. It caused no inconvenience and the horse was hunted regularly. I often saw him out and noticed that the lump was rapidly passing lower down the limb and looked more pronounced. One day the owner spoke to me about it and I advised him to use him for that season, then to let me cut down on it to see if there was anything in it. This I did in April, 1896. I put the horse down and cut down into the swelling. A little straw-coloured fluid escaped when I got down to a sac that had formed, and in the sac was a piece of gorse wood, more than ½ inch thick and 5 inches long. It was slightly curved, one end burnt and the rest charred, all the bark being burnt off. The other end had been broken clean off. This must have been done when the horse fell in 1894, and remained in the body until I took it out in April, 1896. But why did it descend ? When I cut it out it was on the outside of the thigh three or four inches below the level of stifle.

A Remarkable Case of Fœtal Retention.

A black heifer, 2½ years old, was due to calve her first calf in May, 1894. The owner, Mr. Owen, Parciau Farm, Great Orme, Llandudno, had entered her date correctly as she had been sent to a pedigree bull. But up to the end of June she had not calved, and Mr. Owen asked me to see her. When I saw her she was in normal health, in fact, she was in first-rate condition. A calf could be plainly felt. The heifer appeared to continue in good health, so I advised Mr. Owen to wait and watch. I saw her again in July, August and September, and still no calf had been delivered. The heifer was still healthy, fat and comfortable. I could not understand this, for even if the owner had made a mistake in his dates she certainly did not seem to be more than two weeks off calving when I saw her first in June. I told the owner in September that he could only await events and advised him, as soon as she showed any distress, to let me know. It was in the following January that I was called to see her again : she was then still fat and doing well, but the abdomen was immensely swollen, causing interference with breathing and walking. I advised the owner to have her slaughtered as she was good beef. This was agreed to and I saw her killed. The calf was absolutely normal except for size, which was twice what it should have been, for the calf weighed 126 lbs.

Irritability following Tetanus.

In the summer of 1900 a bay gelding of the light vanner type, belonging to a coal merchant in Llandudno, developed tetanus. I treated him by keeping him quiet in a dark box and giving belladonna electuary, and he recovered. But he had lost a lot of flesh and had become very weak. The owner therefore decided to turn him out to grass for a while. About a fortnight after going out to grass he was found standing in the field with a very swollen head, and I was called to see him. He had purpura. I treated him for this by injecting iodine into the trachea, and he recovered and was again turned out to grass. He improved in condition, became quite active, and was brought in to work five months after first having tetanus. Now the peculiarity about this case is that up to the time he had tetanus the animal was one of the quietest and best of workers. A child could do anything with him. Afterwards he became most dangerous both in stable and in gears. He always had to wear a kicking strap, and was put into and taken out of shafts with a twitch on. The owner worked him regularly very hard for seven or eight years, then he hit a man with his front foot, breaking the man's leg. The owner was then obliged to have him destroyed. The question which puzzles me is : Why this irritability ?

Gastric Calculus in a Mare.

A bay Shire mare belonging to Mr. W. Davies, Bodafon Farm, Llandudno, was taken ill with colic. I saw her on the 21st January, 1922. The pain was relieved and bowels acted well next day. But on the 23rd she became unsteady on her legs and, at times, looked as if she would fall. I gave nux vomica and ammon. carb. On the 25th I saw her again. She seemed at first normal though dull, and I watched her for a few minutes in the box. Suddenly she threw up her head and fell down as if she had staggers. After a struggle she got up again, but whenever her head was raised she had a fit. She remained in this condition until the 30th when she died. I made a *post-mortem* on the 31st and found a calculus in the stomach weighing 3 lbs. This is the only case of a calculus in the stomach of a horse that I have ever seen.

A Foaling Case.

The subject was a black Hackney pony mare, "Lady Jones," which I bought at a dispersion sale at Dinarth Hall in the year 1910. She had a foal at foot and was in foal again to "Julius Cæsar." On the following day I turned her out early so that she could foal at grass. About the end of May I noticed her straining, lying down, and getting up again and walking about. There was nothing presenting, and after watching her for about half an hour I got her up into a box and examined her. She was quite slack, and the os uteri was wide open. Tight up on the inside of the os was a solid round mass with a smooth surface. I could push it away but could not get my hand round it. I thought I could turn it, but it was obvious that it would not pass through the os without traction. I procured a double hook forceps and after a lot of trouble secured a hook in opposite sides of the mass, and was able to hold it. After pushing the mass back a little I rotated it, pulling at the same time. After a good half hour's work I got it away. A few minutes afterwards a fine healthy colt foal was born. It lived and went on all right.

The round mass was covered with a thin layer of fibrous tissue. Under this was a layer of bone varying in thickness from ⅛ inch in some places to ½ inch in others. When I sawed through it I found it contained bone, hoof and hair unevenly distributed, and not attached to the sides in any part.

Intestinal Lavage in the Treatment of Enteritis and Diarrhœa in Distemper.*

By J. S. STEWARD, Class D., Royal Veterinary College.

The first case in which this was used was a Fox terrier dog, admitted in poor condition to the distemper ward on August 22nd, suffering from distemper, with enteritis and diarrhœa. On the first day 10 c.c. of anti-distemper serum were injected and an astringent mixture, containing bismuth and tinct. chlorof. et morph. co. was given with dimol pulverettes occasionally for intestinal disinfection. This treatment continued for about four days, during which time the temperature remained at about 103°F. The diarrhœa, which was profuse, fœtid and often blood-tinged, was in no way lessened. On the fourth day a further 10 c.c. of serum was injected and pulv. acetyl. salicyl., with Dover's Powder, was given, as the temperature was now 104°F. Tannoform was alternated with this powder. From the next day Gray's astringent mixture, containing decoction of hæmatoxylin, infusion of cloves and acid sulph. dil. was used, but the diarrhœa remained unchecked, and by the 29th August the dog was most emaciated and weak and would not feed. The owner called that day and said that if the dog shewed no improvement by the next day he would have it destroyed.

It was then decided to try the effect of washing out the bowels, and ℥ss of syrup of dimol was used in two-and-a-half pints of warm water. The solution was passed into the bowel *per rectum*, through a gravitation apparatus consisting of a funnel and three feet of rubber tubing, of which one foot was carefully introduced into the rectum.

The dog was made to stand during the first part of the operation and after half a pint had been retained his hind quarters were raised well above the level of his head while more fluid was introduced. Throughout the anus was kept as tightly-closed round the tubing as possible, to prevent the dog spilling more than could be helped. The fluid was introduced slowly and after about two pints had been retained distension of the abdomen was well marked, and the dog made retching movements with his neck. In a few minutes he vomited quite an amount of the fluid which had been injected per rectum. The dog was then walked about for five minutes and as much of the fluid as was possible was removed by exerting pressure on the flanks and abdomen. After its hind quarters had been dried it was returned to its kennel, where it immediately took a little food voluntarily and appeared much brighter than before.

On the following evening the treatment was repeated until some of the fluid was vomited. Immediately after treatment the dog became much brighter and his appetite improved. From now he made an uninterrupted recovery and the diarrhœa was checked, whereas prior to the first lavage the dog only looked like dying. The owner was astounded and most gratified at the remarkable change for the better and took the dog home three days later.

The method seems to be one of the best ways of performing intestinal disinfection in cases of fœtid diarrhœa, and it has been used in a small number of similar cases with somewhat similar results, though not in every case with success.

* Included in series submitted for award under N.V.M.A. Clinical Prize Scheme for Students, 1928.

ABSTRACTS.

[**The Treatment of Dystokia due to Lateral Flexion of the Neck in the Cow.** DABERT. *Ret. Vét. et Tour. Méd. Vét.* Vol 80. 1928. p. 221.]

The author describes a method of procedure which he has employed—in one case only as yet—to overcome the difficulty of calving a cow when the fœtus has the head turned back to one or other side, but is otherwise in the normal position. He points out that the diameter of the pelvic brim is greater from above to below than from side to side, and it is upon this that the success of the method depends.

He binds the fore legs tightly together and inserts a broom handle, or some similar piece of wood, between them, above the place where they are tied. The broom handle is then used as a kind of key to effect the turning of the fœtus so that the side towards which the head is flexed is brought uppermost. In this position the neck is not so tightly pressed against the side of the chest as it is when it is wedged between the iliac bones, and it is therefore possible to pass a cord round the head of the neck and thus noose the head and secure it. It is also possible to reach the nostrils with the hand and so draw the head forward into the normal position. When this has been achieved the fœtus is rotated back again into the normal position and so delivered. A. L. S.

[Le diagnostic differentiel des maladies rouges du porc. **(The Differential Diagnosis of the "Red Diseases" of the Pig).** LHEZ (B.). *Arch. Inst. Pasteur d' Algerie.* 1927. Dec. Vol 5. No. 4. pp. 538-566. With 4 figs. on 2 plates. Ex *Trop. Vet. Bull.* Vol. 16. No. 4.]

In all pig-breeding countries the contagious diseases called "red diseases" (maladies rouges) of the pig form a serious obstacle to progress. Differential diagnosis must be accurate if progress is to be made against these diseases. This, however, is far from being a simple matter, and the object of the paper is to bring into prominence the important points that have been gathered from the investigations of a number of research workers in various parts of the world.

With regard to swine erysipelas, there is not much difficulty, but the symptoms are not always typical. In the acute forms the reddening of the skin in patches is fairly characteristic. In the chronic forms hurried respiration without cough, cutaneous necrosis, and arthritis are prominent features. At the *post-mortem* examination congestive inflammation with enlargement of the spleen are rather typical. In these cases microscopic examination is sufficient to settle the question.

In the case of swine fever the matter is not so simple. The epizootic character of the disease is the important point. Complications frequently supervene on swine fever, and these assist in diagnosis.

In acute swine fever the inflammation is of the hæmorrhagic type.

When a single animal is affected laboratory assistance must be sought to prove the existence of the filterable virus.

In the case of contagious pneumonia the enzootic character of the disease is of importance, because the disease is less contagious than swine fever.

ADMINISTRATION REPORTS.

Annual Administration Reports of the Bombay Veterinary College, Bombay City and Harbour Veterinary Department and Civil Veterinary Department in the Bombay Presidency (including Sind) for the year 1927-28. Printed at the Government Central Press, Bombay. Price 5d. pp. 56.

The report opens with an account of the year's working of the Bombay City College, of which Major K. Hewlett, O.B.E., M.R.C.V.S., Indian Veterinary Service, was the Principal during the year. There were 98 students on the rolls at the end of the year as against 91 at the beginning.

In the review in this journal of the report for last year, it was observed that the College is well served in respect of Scholarships, grants-in-aid to students from Provinces in States, and in domestic matters such as hostels, gymkhanas, riding classes and excursions. These benefits are equally evident this year. The following extract on Employment of Graduates is the most interesting item in the report of the College.

"*Employment of Graduates.*—Of the 18 students who passed in 1927, 16 are in the service of Government or Local Bodies, and two are in the service of Indian States. Of the 16 graduates who passed in 1926, nine are in the service of Government and seven are in the service of Indian States. Of the 13 graduates who passed in 1925, seven are in the service of Government and six in the service of Indian States. Thus, out of a total of 47 graduates passed out during the last three years, 32 are in Government service and 15 in States' Service. All have obtained employment.

Next comes a short account of the municipal veterinary work of Bombay City and Harbour, also from Major Hewlett. Six cases of glanders (two clinical) and six cases of surra were detected in the City and destroyed.

Importation was made into Bombay, of 2,988 horses, 30 mules and eight zebras, against 2,755 horses, 510 mules and eight zebras last year and 2,587 horses in the preceding year. Of this year's imports of horses, 1,920 were from Australia, 238 from England, and 758 were Arabs from the Persian Gulf.

The third edition of the volume is occupied with a report from Mr. E. S. Farbrother, M.R.C.V.S., I.V.S., on his work in the Bombay Presidency. This officer was on tour for 107 days and travelled nearly 7,500 miles by rail and road.

Contagious Disease.

Outbreaks numbering 1,634 were attended, 44,797 animals being attacked. There were 8,031 deaths, as against 65,579 and 11,613 last year. "The reduction is mainly under rinderpest and foot-and-mouth disease, both of which diseases were not so wide spread."

Other diseases were: hæmorrhagic septicæmia—3,590 affected, 3,085 died; blackquarter—1,621 attacked, 1,499 died; anthrax—1,148 affected, 828 died. The following extract mentions the therapeutic efforts that were made to control the diseases:—

Preventive Measures.

Rinderpest.—As previously pointed out, rinderpest was not very wide-spread during the year and consequently the number of inoculations performed by the "serum alone" method is considerably lower than in the previous year. Fourteen thousand seven hundred and forty-five cattle, sheep and goats were inoculated in 99 outbreaks against 23,159 in 212 outbreaks last year and the mortality recorded among the inoculated was 25 against 61. Ninety-eight cattle were in addition protected by the serum-simultaneous method against 57 of the year before.

Hæmorrhagic Septicæmia.—Two thousand nine hundred and thirty-five animals were vaccinated in 36 villages. 10,891 protected by serum inoculation in 108 outbreaks and 1,462 by combined serum inoculation and vaccination in 15 outbreaks against this disease, the recorded mortality among the protected being 19. There is an increase of 6,183 protected over the previous year.

Anthrax.—Nine hundred and eighty-eight serum inoculations were undertaken to protect cattle and sheep against anthrax in 12 actual outbreaks of the disease and five deaths were reported amongst the inoculated. In the previous year 378 inoculations were performed in six outbreaks.

Black Quarter.—One thousand and sixty-three cattle were inoculated with serum alone in 16 outbreaks and 2,190 by combined serum and aggressin in 33 outbreaks. Six of these were reported to have died subsequent to the inoculation to black quarter.

Fifty-three cattle at the Bankapur breeding farm were protected with black quarter aggressin. An outbreak of this disease occurred on the farm in February and four of the protected cattle died.

Contagious Diseases in other Animals.

A contagious disease among sheep and goats, particularly the latter, was reported from several talukas of Bijapur District towards the end of the year. Four hundred animals were reported to have been attacked by this disease, of which 265 died. Investigation into the cause of this disease is not complete, but in some respects it resembled rinderpest and was dealt with as such, and serum simultaneous inoculations appeared to have some beneficial results.

The following extracts indicate that there is a lot of keen work being done in the Bombay Presidency and that Mr. Farbrother has his Department well in hand:—

Subordinate Establishment.

There were five Veterinary Inspectors and 113 Veterinary Assistant Surgeons employed at the beginning of the year. During the year, one Veterinary Assistant Surgeon retired on superannuation pension and one on invalid pension; one was transferred to the Civil Veterinary Department, Sind, one to the Agricultural Department, and one resigned. Eleven new recruits were appointed and the number employed at the close of the year was therefore five Veterinary Inspectors and 119 Veterinary Assistant Surgeons. With few exceptions, they all worked well.

The Veterinary Inspectors, in the course of their tours, travelled 11,809 miles by road, 18,769 miles by rail and 286 miles by sea. They inspected the majority of the Veterinary Dispensaries in their Divisions three times, checked the work of the Veterinary Assistant Surgeons in the villages, attended fairs and shows, inspected tonga lines and visited pinjrapoles, cattle markets, etc.

GENERAL REMARKS.

The work of the department has been well maintained, rinderpest has been less prevalent than usual, but hæmorrhagic septicæmia and black quarter were more wide spread and consequently there was no reduction in the number of calls made on the Department in connection with this class of work. There appears to be marked improvement in reporting, 1,281 of the 1,591 outbreaks being reported through the official agency. One hundred and sixty-one were reported by cattle owners themselves, and this is very encouraging. More promptness in reporting is still required, however.

The volume concludes with a report by Mr. J. H. Jerrom, I.V.S., on the civil Veterinary work in Sind and Rajputana. It is chiefly a statement of the outbreaks of contagious disease, deaths, etc., which occurred during the year, in which there appears to have been nothing very much out of the common.

The several reports all contain references to the large amount of work which is being done by the many local dispensaries throughout the districts. Apart from the actual remedial part played by these dispensaries, they must be invaluable to the veterinary administrators as outposts of sanitation in the war on zymotic disease.

J. W. R.

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(1) Annual Report of the Civil Veterinary Department, Bihar and Orissa, for the year 1927-28.

(2) Report on the working of the Civil Veterinary Department of the Central Provinces and Berar for the year 1927-28.

The above reports are eloquent of the magnitude of the work already performed, and what requires to be done, in two important Provinces of India. They deal in big figures, demonstrating the grave incidence of cattle disease and deplorable losses in consequence. In each Province some 20,000 deaths are reported to have occurred during the year, mainly from rinderpest and hæmorrhagic septicæmia, but it is open to doubt if even these represent the totals, as many outbreaks of disease are probably not reported. The mortality figures do not include losses due to sickness and particularly foot-and-mouth disease, in which the outbreaks run into thousands during the year.

The activities of the two departments concerned, within their admitted limitations, were certainly most praiseworthy and receive well-merited tribute from the heads of the Administrations. A very large number of outbreaks was attended and preventive inoculation was widely practised. In Bihar and Orissa some 245,000 animals were inoculated, at a cost in sera and vaccines alone of nearly £9,000, and in the Central Provinces over 100,000 inoculations were carried out, including some 10,000 with trypanblau for Piroplasmosis—a comparatively recent activity.

In other directions superintendents record much work in connection with the treatment of sick animals at dispensaries and in villages by the itinerating staff and with breeding operations. In the Central Provinces some 120,000 animals were treated at dispensaries and 350,000 on tour, whilst in Bihar and Orissa about 100,000 were treated at dispensaries and nearly 170,000 on tour. Laboratory work involved the examination of 7,000 to 8,000 specimens in each Province.

The striking feature of the reports, apart from the actual record of work, is the problem of administration. In the Central Provinces, Mr. Wilson has retired after a long tenure of service as the Head of the Department and Mr. Quinlan has similarly relinquished the post of Director in Bihar and Orissa. There officers are succeeded respectively by Majors Stirling and Riley, who had hitherto been employed as seconds in command, but there is no indication that the places of the last named officers have been filled or are likely to be filled immediately by officers with the requisite qualifications.

The reviews of the respective Governments appear to realise fully the scope and immensity of the work in front of their veterinary department and refer to the recommendations of the Royal Commission on Agriculture, which involve necessary expansion.

The Government of Bihar and Orissa is about to establish a Veterinary College at Patna, to meet future demands, but both Governments make the usual excuse of financial stringency, and there appears to be no immediate prospect of any other striking development. It is clear that unless administrations in India are prepared to face the situation and realise more fully the importance of recruiting well-qualified officers to maintain existing responsibilities and to initiate further activities, there is little hope for further progress and moreover, the structure, which has been so laboriously constructed, is not unlikely to collapse.

G. K. W.

From The Veterinarian, April, 1828.

Analysis of the Fluid Effused in Pleurisy in Horses.

By M. J. L. LASSAIGNE.

1st. Colour, yellow; taste, saline; very viscous, froths when agitated and mixes readily with water.

2dly. It restores the blue to turmeric paper reddened by an acid. Nitric acid immediately precipitates large white flakes from it; infusion of galls throws down a copious, yellow, fleecy precipitate.

3dly. By heat it coagulates in yellow flakes and turns to a mass resembling the white of egg; silver immersed in this coagulable fluid while hot is withdrawn blackened: which is similar to what happens with white of egg, and is owing to the presence of sulphur.

4thly. The coagulated substance has a yellow colour, which alcohol deprives it of, and which, separated from the animal matter, is soluble both in water and spirit. The animal or albuminous substance, calcined in an earthen crucible, yields an ash from which is extractable a small quantity of phosphate of lime, as shown by its effervescence with weak nitric acid.

5thly. The coagulated part of this fluid, evaporated to dryness, yields a yellowish white alkaline extract, possessing a highly saline flavour. It contains a small portion of albumen, held in solution by the alkali present. The product of its calcination furnished, on being washed, subcarbonate of soda, muriate of soda, a little sulphate of soda and muriate of potash: but no trace whatever of any soluble phosphate.

The conclusion deducible from these experiments is that this fluid bears the greatest analogy to the serum of the blood, both in regard to its physical properties and chemical composition; and that it consists principally of albumen and water, pervaded by a yellow colouring matter, and impregnated with all those salts detectable in the blood.

DIVISIONAL REPORTS.

Central Division, N.V.M.A.

The principal feature of the March meeting of the Central Division N.V.M.A., which was held at 10 Red Lion Square, W.C., on Thursday, March 7th, 1929, was the presentation by Mr. A. Spicer, of Oxted, of the second part of his paper, entitled "Milk Fever, the Nervous Forms of Distemper and Hysteria," the first part of which, dealing with milk fever, had been read and discussed at a meeting of the South-Eastern Division earlier in the year. Fellows had had an opportunity of reading Part I. in the *Record* of March 2nd, and the numbers attending on the present occasion indicated the interest aroused thereby, and their desire to hear and discuss with the author the application of the principle of his new theory of the causation of milk fever to the nervous canine affections indicated.

The Chair was occupied by the President (Professor James Macqueen), and there were also present Lt.-Col. E. P. Argyle, Capt. L. S. Balls, Capt. A. Barr, Mr. H. Bell, Capt. R. Bennett, Mr. W. Brown, Capt. R. Bryden, Professor J. McCunn, Mr. J. C. Coleman, Major G. W. Dunkin, Mr. J. Elmes, Mr. L. Gabriel, Dr. Tom Hare, Mr. H. D. Jones, Mr. H. C. P. King, Mr. Herbert King, Major H. Kirk, Messrs. J. W. McIntosh, W. Perryman, R. A. Philp, and A. B. Orr, Vety.-Major G. Rees-Mogg, Mr. C. Roberts, Mr. A. Spicer, Lt.-Col. P. W. Dayer Smith, Mr. A. W. Stableforth, Capt. R. J. Stow, Dr. A. L. Sheather, Messrs. E. Alfred West, F. W. Willett, R. A. Willett and J. D. Williams, Professor G. H. Wooldridge and Capt. J. F. Macdonald (Hon. Secretary). *Visitors*: Messrs. S. J. Edwards, R. Davidson, C. Elphicke, W. J. Leyshon, A. Millar, A. J. James, Dr. P. Kaestli, Mr. T. J. Richardson, and Mr. F. E. Somer.

During the evening the President, on behalf of the society, extended a hearty welcome to their distinguished Swiss colleague, Dr. P. Kaestli, of Berne.

The minutes of the February meeting of the Division, which had been published in the *Record*, were taken as read, and were confirmed. This was accomplished before Dr. Tom Hare rose to enquire if he was in order in asking a question on the minutes, when the President ruled that the matter must now be dealt with under Any Other Business.

Correspondence. (1) From Major F. Hobday, Capt. S. J. Motton, Major-Gen. Sir John Moore, Lt.-Col. H. S. Mosley, Lt.-Col. W. A. Pallin, Mr. J. H. Poles, Mr. H. L. Roberts, and Major R. F. Wall, apologising for inability to attend the meeting.

(2) From Major F. J Andrews, R.A.V.C., resigning Fellowship by reason of his transference from the Aldershot to the Southern Command, which would preclude his attendance at the meetings of the Society.

Major Andrews' resignation was accepted, with regret.

Elections to Fellowship. The following elections to Fellowship of the Society were unanimously made: Mr. A. B. Orr (Royal Veterinary College), proposed by Dr. Hare and seconded by Professor Wooldridge, and Mr. F. E. Somer (New Cross), proposed by Major Kirk and seconded by Mr. Jones.

Morbid Specimens and Interesting Cases.

Capt. L. S. Balls exhibited a number of small calculi taken from the urethra of a dog on *post-mortem*. The subject was French poodle pedigree dog, of Monte Cristo stock, bred at King's Langley, Herts, and was aged three-and-a-half years. During the first year of life he had worms badly and was subject to slight vomition, bringing up much yellow froth. The breath was foul. While at Hampshire in August, 1928, the dog had a week's sickness and diarrhœa.

During the recent cold wave in February for two or three days large quantities of urine of a deep, yellow colour were passed. From about February 26th it gradually got less until passing was spasmodic, and in drops of a dark, dirty colour. About this time pain was indicated by one or two sharp cries, but the dog was lively and affectionate as usual. The animal gradually became quieter, showing less vitality, but it ate well. On Sunday, March 3rd, in the morning, a catheter was passed, yielding a considerable amount of water of dark colour. The veterinary surgeon remarked that the smell was not favourable. A small stone, of about pin head size, was also passed. Returning home, the dog seemed relieved. Urine was passed in drops. The dog seemed affectionate and took food, but sitting appeared difficult. At about 4-30 on this day (March 4th) the dog suddenly shrieked, rushed under the table and then out of the room on to the door mat, where he collapsed. Death took place at 4-40 a.m. on the 5th.

Mr. Balls desired enlightenment on the following questions: (1) In the event of a dog having stone, is it to be discovered in the early stages? (2) In the event of a dog having stone more advanced, is there any remedy? Are there any medicines which would dissolve the stones, or could they be removed by operation? (3) How long would a stone take to form?

Mr. Henry Gray, commenting on the case, said that in his experience the condition was a very common one. He had operated on dogs five or six times, and he had found stones to form in less than three months. He thought their seat of origin to be the kidney; he had seen the kidney full of them; in fact, there was sometimes no kidney left—only a sac. In such cases of urethral block by calculi he did the ordinary operation of pushing the calculi lodged in the penial bone into the wound and allowing the urine to wash down the others. The operation brought about a recovery; at least, for the time being, until other calculi formed. Another method was to syringe water, with force, up the urethra and flush the calculi out in that way.

Mr. J. D. Williams expressed the view that such cases were quite common: he had not been in practice very long, but he had seen a considerable number of them, and in his experience they were very unsatisfactory. If one did operate one found, as Mr. Gray had said, large numbers impacted in the penial bone and then in a few months, or it might be weeks or even days only, another crop of calculi appeared to come down and one had the same trouble all over again. These cases of small calculi presented far greater difficulty than those where a large calculus existed, which one could tackle from the bladder.

Proceeding, Mr. Williams said that he had some small specimens, also, to show them—the milk teeth from a fox terrier dog, and the only point of interest was that they were situated on the inner side of the permanent molars, sticking into the palate. He had seen canine milk teeth remain for a long time, but he had never seen temporary molars do so.

Mr. GRAY observed that retention of the temporary teeth—canine, incisors and molars—was very frequent in the smaller breeds, especially the short-faced ones, in which the teeth were placed irregularly in the dental arcade.

ANY OTHER BUSINESS.

Dr. TOM HARE now spoke to the question which he had desired to put in "Business arising out of the minutes." He assumed that he would have to move a motion and since his previous statement he had been trying to draft one. He would like to frame it in these terms: "That this Society seeks an explanation of the action of the Council of this Division in ignoring the wish of members that abstracts of the speeches of the December meeting be published."

At the December meeting the President expressed the opinion that it might not be desirable, since such an acute and lengthy discussion on the R.S.P.C.A. scheme had taken place, that the whole of the discussion should be published. However, the President on being asked by him (Dr. Hare) to state to what extent publication would be permitted, replied to the effect that a sub-committee should be appointed which should arrange for abstracts of the debate to be prepared and published. Possibly the President would recall, that he (Dr. Hare) had accepted this provision and furthermore that he had suggested that the statements which the President had made upon the question of the R.S.P.C.A. scheme should be printed in letters of gold. He was assured that that invitation met with the full approval of members, since it was loudly applauded. At the last meeting of that Society he raised the question on the minutes and he was informed that the sub-committee had decided not to publish the debate—merely the resolutions.

He did not desire to cause any inconvenience to members of the profession who might be engaged in what was represented as rather a difficult enquiry, so he endeavoured to learn what were the motives behind all this suppression of opinion. He was given to understand that it was not felt desirable, by certain members of the profession, that the opinion of individual members of that Division should be made known to the public or to the profession, while conversations with the R.S.P.C.A. were being held. Might he, for the sake of brevity, where referring to this desire, use the term "secret diplomacy"?

Now it was clear that the Council of the N.V.M.A. or of the R.C.V.S. did not require discussion *in camera* by the profession of the R.S.P.C.A. scheme before the publication of the discussion of the subject by the South-Eastern Division. That debate was published in full, so that the Council of the N.V.M.A. did not at that juncture recognise the expediency, at least, of secret diplomacy on the subject. Secondly, if secret diplomacy had become the policy of the "National" at the time of the Central Division's meeting in December, then the late President of the "National" stood condemned for wilfully deceiving that Division, in that, being present when the Division decided that abstracts of its debates should be published, he made no mention of any such policy of secret diplomacy. He respectfully contended that the late President of the N.V.M.A. was not only an honest man, but an exceedingly generous man, and it appeared to him inconceivable that he would wilfully deceive the Central Division. Therefore, he assumed that such was not the policy of the N.V.M.A. in December, but that it became somebody's policy after that Division's debate. But there had not been in the meanwhile any meeting of the R.C.V.S. Committee or of the N.V.M.A. Council at which such a policy had been determined, by a majority of the members present. Therefore, that policy, which had been first declared at the last meeting of that Division in answer to his (Dr. Hare's) enquiries, was formulated not on the authority of the Association or of its Council, but on the authority of certain individuals.

One final point was that he thought it derogatory to the intelligence of the members of that Division that an attempt should be made by officers of the N.V.M.A. to shelter behind the R.C.V.S. in that matter. He suggested that the R.S.P.C.A. enquiry did not come within the functions of the R.C.V.S., which, he might be permitted to remind them, were concerned with the keeping of the Register and the conduct of examinations. It was not right or just that the members of the "National" and of that Division, should be coerced into believing that the authority for all that secret diplomacy was 10 Red Lion Square. If it was the fact that 10 Red Lion Square was undertaking these conversations with the R.S.P.C.A. it only proved the deplorable impotence of the N.V.M.A. to conduct the affairs of the veterinary profession.

It was with deep regret that he found it necessary to raise the matter on a motion before that meeting, since he had hoped that satisfactory answers to his questions would have been given previously. Since no explanation had been offered to members he felt he must remind members that they should not permit their decisions to be set at nought in that manner. He himself was quite prepared to accept an explanation from the Council in which they would also ask permission for the Division's decision to be set aside.

Mr. HENRY GRAY seconded Dr. Hare's motion, stating that he entirely agreed with his remarks. He thought members of the Division were entitled to the explanation which had been asked for.

Mr. MCINTOSH said that he hoped that that meeting would reject with no uncertain voice Dr. Hare's resolution. If it was carried it would, in effect, amount to a vote of censure on themselves.

That part of the proceedings to which exception was now taken was discussed in committee and was not for publication unless otherwise decided, but in order to give effect to the views of certain members a sub-committee was appointed (with full powers) to consider what details, if any, should be published. Their decision, he thought, was a very wise one, and ought to be accepted loyally by every member of that Division. (Hear, hear.)

He was sorry Dr. Hare had gone out of his way to implicate the Councils of the R.C.V.S. and the parent body.

He seemed to think that behind the decision of that committee there was a sort of "secret service" influence by one or other or both of those bodies. He would refrain from commenting on so unworthy a suggestion. (Applause.)

The Sub-committee were, he was satisfied, actuated by only one desire—the best interests of all concerned, and for that reason, if for no other, he hoped they would reject the resolution.

The PRESIDENT remarked that the meeting about which all that noise was raised took place in December, when the Division had a request from the N.V.M.A. for an opinion as to whether or not that Division would support the proposed scheme of providing free treatment for the animals of the poor. The discussion lasted a long while, and when the report was received it occupied forty pages. They wanted to remember, however, that the reason for the freedom of speech was the sanction given at the beginning that the discussion should be conducted *in camera*, so that everyone might express himself freely. Then, at the close of the discussion, the meeting of the members then present decided to refer the report to a sub-committee of three members: Sir John Moore, Mr. Livesey, and Mr. Perryman; those three were to consider the report and to decide as to its publication. The report was considered in due course and the sub-committee decided that it was not advisable to publish it. At one time there was a feeling that by deletion, amendment, and other arts the report might be passed for publication, but on further deliberation it was decided that it was not a suitable thing to publish in the *Veterinary Record*. That was the opinion of the Sub-Committee to which the report was referred. They decided, however, that the two resolutions that were passed should be published and they were published and, so far as that Division was concerned, that was an end of the bother. Now Dr. Hare proposed that they should begin and kick themselves and enquire why they did not publish that report—why they did not listen to the minority who desired that the report should be published *in extenso*.

The reason was given long ago. He had nothing further to say, except that if Dr. Hare desired that his proposal should be put to the meeting he should put it. There was no question of secret diplomacy or any other extraneous matter; it was simply a question of the advisability of publishing a discussion which was more or less libellous in parts—(laughter)—and which was calculated to bring that Society into disrepute with certain other societies, and that was the reason why the decision not to publish was reached.

Dr. HARE said that he would like to reply. The point at issue was the interpretation of the President's statements. He did not recall any decision of the Division that their debate should be held *in camera*. (Cries of "Oh!") If his memory was at fault, he would defer to the opinion of members; but in that case he would ask where was the necessity to appoint the sub-committee to consider how much of the debate should be published. The whole point was the question as to what extent the debate should be published, not that the debate was *in camera*. He also desired to add that it was deplorable how, whenever policy was questioned in the profession, it appeared, for some extraordinary reason, to be taken personally. He would be quite prepared to accept the Divisional President's statement to the full, but would it not have been right that the consent of the society to the censorship should have been requested? All the Council had to do was to ask the consent of members that there should be no publication whatever. It was a fact that no one had attempted to ask their consent. Was it not possible for the President, now that all the members had been made familiar with the facts, to ask: "Do members approve of the action taken?" That would suffice, and he would accept it.

Mr. W. PERRYMAN stated that he was surprised to hear Dr. Hare say that he did not note the approval of the meeting to the proposition that the discussion should take place *in camera*, for it was very clearly understood. (Hear, hear.) There was a tremendous freedom of speech, and the Sub-committee, of which he was a member, went through the report very carefully. To cut down the different speeches would have given rise to a good deal of ill feeling. Accordingly, they thought it advisable to restrict the published matter to the two resolutions, and he thought they had full authority from the meeting to do as they did. He had no apology to offer to Dr. Hare or to anyone else, for acting as they had done in cutting the published matter down to the two resolutions. (Applause.)

Dr. HARE said that, with the permission of his seconder, he was quite prepared, in view of the explanation offered from the chair, to withdraw his motion. Mr. GRAY having been understood to comply, the PRESIDENT closed the incident with the words: "I think that is a very wise course."

Renewed consideration was now given to the following resolution, forwarded by the N.V.M.A.: "That the following addition be made to Article 59 in the Articles of Association of the Association: 'Twenty-five representatives previously nominated by members of the Association and elected by them by ballot prior to the Annual General Meeting.'"

The PRESIDENT remarked that the Division was mainly concerned in giving an opinion as to the advisability of making the proposed addition to the Council of the N.V.M.A.; the members were not required to discuss the why and wherefore. They had only to say whether they agreed or disagreed with the proposal. He would ask the Secretary to read the accompanying explanatory communications from the Secretary of the "National."

The HON. SECRETARY read the letter and memorandum relative to the proposal. [These appeared in the *Veterinary Record* of February 16th, in the course of the report of the Mid-West and South Wales Division meeting at Bristol.—Ed.]

Mr. A. W. STABLEFORTH stated that what they appeared to be asked to do was just to decide whether they thought it desirable to strengthen the National Council by the addition of twenty-five members, who should be elected solely on their merits, as shown by their services to the profession generally, and not to any particular Branch or Division. Such an addition would broaden greatly the basis of representation; it would enable them to select men who had shown what they could do for them, whether they lived in London or in the North of Scotland, and who were intimately familiar with the working of the Associa-

tion, and he thought that was very desirable. (Hear, hear.) If, as it might be feared, some of the members became somewhat permanent, that would be solely because they thought that these were serving them well, and so, naturally, they would continue to select them. (Applause.)

Mr. PERRYMAN said that, as one of the members who, at the last meeting, voted that this matter should appear on the agenda paper on the present occasion, he felt he should like to say a few words concerning it. To him it had seemed rather a remarkable thing that the Council of the "National" should require twenty-five more members, for each Society had the privilege of sending one representative for every fifty members, in addition to the Hon. Secretary, and that appeared to him a fair representation. If there was any numerical weakness in the Council at its meetings, why did not the societies elect men who could be relied upon to attend them? He imagined that too many of these representatives were mere figureheads. If twenty-five other people were elected, would they attend? It was, in many cases, a great sacrifice of time and money. Would men from the North of Scotland, for example, come down more frequently than they did at the present time? Council representatives numbered over seventy at present; let them add twenty-five, and the number would approximate 100. Would these do more work than was accomplished by the present number of Councilmen? Personally, he was quite satisfied with the work of the Council, as that body was now constituted. They all believed that they did their level best, having the good of the profession at heart. In his view, a big Council was unworkable, and an addition to its numbers would prove a hindrance to its work. His remarks were not to be taken in any way as being derogatory to the working of the Council at the present time; in every sense of the term it was to be highly commended, but they only wanted representatives to Council who would be prepared to attend and do its work. It had been said by some that if the new proposals were carried into effect it would place Council representation more in the hands of London men. He did not know that the London men at present serving on the Council had reaped any advantage over the provincial men. He thought they could give credit to every member of Council for working impartially and for the benefit of the profession as a whole, entirely excluding any element or selfishness or personal feeling; in the minds of none of them was there any desire that one part of the country should benefit more than another. (Hear, hear.)

If, however, the Council in its wisdom thought such an addition to its members advisable, he did not think that the proposal should be opposed by the meeting.

Major G. W. DUNKIN said that he was originally responsible for bringing this matter to the fore, at the Newcastle Congress, and he did so for this reason. Doubtless many of them there had in mind occasions when the time had arrived for the election of members of Council from that Division and others in the South of England. Carrying them back a few years, doubtless a number of them would remember that there was a time when the representation of the Divisions on the Council of the "National" was one for every twenty-five members—exactly double what it was to-day. He had been a member of the Council of the N.V.M.A. since the year 1919, and never did he remember there being an unwieldy Council meeting, in spite of the fact that up to the year 1925 the Council was composed of exactly twice its present number of members. So that, in so far as the projected increase of twenty-five members was concerned, that was not likely to produce an unwieldy Council. His main reason for bringing the matter forward, however, was that he had observed in that Division, in the Royal Counties, the South Eastern, the Mid-West and S. Wales, the North of England Divisions—to mention only a few—that they had had some difficulty in deciding whom they might elect because they had several candidates—able men—who were willing to stand for Council, who would have been acceptable to the Division as representatives and who would have attended the meetings. When it was first mooted, in 1925, that the Divisional representation should be cut down, he was one of the strongest opposers, because he thought he could see what had, in fact, actually happened. He proposed, at Newcastle, that they should revert to their old system of one representative for every twenty-five members, or part thereof. Eventually it was decided that the present proposition, which was before them, should be put to the Divisions for their opinion, and he thought it was a very excellent way out of the present well-known and recognised difficulty.

Mr. STABLEFORTH expressed the opinion that Mr. Perryman's remarks had only strengthened the reasons for carrying the proposal, because the latter had suggested that they already had three or four members for each Division, from all parts of the country, and that was just the trouble. The majority of those members were not sufficiently near headquarters to attend the meetings. When they had one representative for every twenty-five members it was worse still, and the proportion of members attending was very small. They did not want a large body of members, a small proportion of whom attended; what they wanted was an addition, to the existing representation from the Divisions, of twenty-five members who were elected solely because they had shown that they were willing to attend meetings and could help the Council and the profession. (Applause.) He therefore proposed "That this Division is in favour of the proposal to add to the membership of the Council of the "National" by the addition of twenty-five members to be elected by ballot prior to the Annual General Meeting."

Major DUNKIN seconded the proposition, which was carried by a large majority.

The President now called upon Mr. Spicer to present his paper, which was heard with the keenest interest by the members. A useful discussion followed, which is reproduced, with the paper, at the commencement of this issue of the *Record*.

The PRESIDENT proposed a vote of thanks to the essayist for what he described as a very able, interesting and instructive paper. He was sure they would all read it with care when it appeared in the *Veterinary Record*. The vote was accorded with the greatest heartiness, as were similar tributes to the President for his conduct of the meeting, and to those who had contributed to the clinical section of the proceedings.

J. F. MACDONALD,
Hon. Secretary.

XUM

North Wales Division, N.V.M.A.*

COLWYN BAY MEETING.

A meeting of the above Division was held at the Cartmell Hotel, Colwyn Bay, on Friday, 15th February, 1929.

The newly-elected President, Professor J. Share Jones, occupied the Chair, and the following members were present:—Messrs. Booth, Cartwright, Llewelyn Jones, Wynn Lloyd, Savage, Wynne and H. V. Hughes (Hon. Secretary). Lieut.-Colonel Brittlebank and Mr. W. R. Davis, Rhyl, attended as visitors.

The very bad weather conditions militated against a full attendance, and apologies were received from Messrs. Cane, Edwards, Major Hobday, Messrs. Lawson, Lewis, and Dr. Montgomerie.

The minutes of the previous meeting, having been published in the *Veterinary Record*, were taken as read and were confirmed.

The PRESIDENT said that he wished, at the outset of the meeting, to call the attention of the members to two matters which concerned them as a profession. He said that at last they were being told officially what leading veterinary men had been endeavouring to tell this country for years. Quoting from a report issued to the Secretary of State for the Colonies last month, he said: "The advance of agriculture is closely associated with animal husbandry in its widest sense. . . We cannot any longer limit veterinary activities to the mere treatment of specific diseases, or even to the prevention of the spread of epizootic and enzootic diseases. The increase and improvement of domestic stock of all kinds are essentially part of modern veterinary science."

He (Professor Share Jones) hoped that effect would be given to this view and that the representatives of veterinary science would be given a free hand and support to bring about a development which, having regard to the most pressing need of to-day—the production of essential food—was urgently required in the interests of the whole community.

We looked to Switzerland for a lead in many things. We could well afford to turn to Switzerland in this matter, when it would be found that over a quarter of a century ago the University of Berne granted a complete Faculty in Science—the first in the world. He was honoured by an invitation to address the University of Berne in congregation on the twenty-fifth anniversary. Complete autonomy in Berne had led to wonderful developments, and workers from other countries, even Germany, had been attracted to Berne.

But University autonomy to such a degree had not yet been conceded in this country. He felt that in consequence progress had not been so rapid as in Switzerland and other countries, and our national interests had suffered. It was scarcely fair to require the veterinary profession to shoulder the responsibility which the nation demanded of it without according to the profession a commensurate degree of authority.

The President said that there was a second matter with which they were concerned that afternoon. There were movements on foot at the present moment, some of which were not without grave danger, especially to the animals. Announcements were quite common that somebody o other was undertaking to treat or painlessly to destroy animals of the poor. The announcements were generally followed by an appeal for funds in language that some people would call "sob-stuff." As a rule a generous public responded freely.

But the public should know that the Council of the Royal College of Veterinary Surgeons was particularly anxious that our dealings with the animals should be in the highest degree humanitarian. The Council had this general question in hand and were determined to safeguard the public interests and the interests of the animals themselves by securing that the animals of the poor should not be made the subjects of practises of unskilled persons under any pretext whatsoever, and that all treatment prescribed should be of the highest possible efficiency.

Professor Share Jones said that he had weighed up this brief statement as carefully as possible and he made it deliberately, as President of the Royal College of Veterinary Surgeons, for the second matter to which he referred was one of the utmost gravity to veterinary science as represented by the R.C.V.S. The Council of that body had invited the N.V.M.A. to circulate its Divisions with a view to obtaining the opinion of practitioners generally on the question of free veterinary treatment for the animals of the poor, and he therefore asked the meeting to discuss the matter before proceeding to the other business of the afternoon. In order to facilitate discussion he had framed a resolution which he would propose for their consideration. A general expression of opinion was all that was desired. The resolution was as follows: "That this meeting of North Wales practitioners welcomes the efforts of the Royal College of Veterinary Surgeons to secure free treatment generally for the animals of those unable to pay, that it assures the Council of its cordial sympathy and support in any system which the Council might put into operation and reposes full confidence in the Council to secure any scheme evolved against abuse, and to protect adequately the prescriptive rights and privileges of qualified veterinary surgeons."

Colonel BRITTLEBANK was now invited by the President to express his views on the situation. He said he wished first to congratulate the President upon his election to the Chair of the Society. He felt sure that his services would be a very great asset to the Society and that his election would bring together the mass of scattered practitioners who made up the membership of the Division.

He was very glad that Professor Share Jones had raised the two matters that afternoon, for, as he had said, they were of the utmost importance to the profession. As regarded the White Paper of the Colonial Office, he was proud of the position occupied by the veterinary profession. They had had to fight hard for that position, but it was obvious that the Committee would be obliged to agree with their propositions. He wished, in passing, to pay a tribute to the chairmanship of Lord Lovat. It had been admirable throughout.

Colonel Brittlebank then proceeded to discuss the question of free treatment for animals of the poor. He explained the situation as he found it during the time when he was President of the R.C.V.S., and emphasised the difficulties which delayed a settlement of the question. He was, however, optimistic about the future and he asked the members to support the Council of the R.C.V.S. who,

* Received on 7th March, 1929.

as the President had informed them, would take all precautions to see that the profession would not be abused. He trusted that the members would all support the resolution.

Several members having spoken in favour of the resolution, the PRESIDENT expressed his gratification at the way the meeting had received his proposition. He was also very pleased to have had the opportunity of hearing the views of the practitioners. They were all aware that there was a very strong bond of sympathy between them and the animals committed to their charge, and he wished to say emphatically that the veterinary profession was second to no organisation in supporting what was a humanitarian attitude towards animal life. After what had been said he felt convinced that the terms of his resolution conveyed their sentiments, and he therefore formally moved the resolution as it had been previously read.

Mr. WYNNE seconded the resolution, which was carried unanimously.

The PRESIDENT said his next duty was a painful one. The members had no doubt heard of the loss Mr. Wynn Lloyd had suffered in the passing of his brother. He (the President) had watched the progress of the late Mr. Lloyd Jones with interest, and his death came as a great shock to him. He asked the members to express their sympathy with the family in the usual way. The members then stood in silence.

Correspondence.—(1) From Mr. Wynne, in which he thanked the members for appointing him as their Vice-President.

(2) From the National Horse Association, with reference to the Society's becoming affiliated to that body. It was agreed that the Society subscribe a guinea and thus become affiliated to the Association.

(3) From the Secretary of the Victoria Veterinary Benevolent Fund, thanking the Society for the sum of 17s. subscribed at the last meeting. Colonel BRITTLEBANK, as President of the Fund, thanked the members for their effort on behalf of the charity. The SECRETARY drew attention to the box which was on the table and appealed to the meeting to make an effort to increase the amount which had been collected at the last meeting. (The box was later opened and the amount collected was found to be 15s.)

Mr. WYNN LLOYD suggested that it would benefit the fund if practitioners were to apply for a box to place in their surgeries, where they might serve as receptacles for donations made as a return for voluntary work. Colonel BRITTLEBANK assured the members that boxes would be supplied *gratis* on application being made.

(4) From the Council of the N.V.M.A. *re* treatment of animals of the poor (already dealt with) and *re* an amendment to Article 59 of the Articles of Association. This matter was discussed at some length, but it was finally decided to postpone further consideration until the next meeting.

The SECRETARY stated that the nominations to the Council of the N.V.M.A. would be required before the next meeting of the Society. It was the custom of this Society to nominate the President and the Hon. Secretary.

This was agreed to.

Subscriptions.—The HON. TREASURER then made a statement with regard to the subscriptions. He had, he said, circularised all those members whose subscriptions were overdue. Some had replied, but others had still to make up their arrears. It was resolved that the Hon. Treasurer and the Hon. Secretary deal with the question of arrears of subscription and report to the next meeting.

Inspectors' Section.—The PRESIDENT reminded the meeting that he had, at the last meeting, moved a resolution on this matter which was as follows: "That all the members of the Society should constitute themselves into a committee of veterinary inspectors for the purpose of dealing with such questions as might be referred to it as a Veterinary Inspectors' Section." He suggested that the members had now had sufficient time in which to consider the question, and he therefore moved the resolution again.

Mr. WYNN LLOYD seconded the resolution, and it was carried unanimously.

The PRESIDENT said he wished to make a suggestion to the meeting, namely, that they should hold an Annual Dinner. He considered that it would be an invaluable means of bringing together the members of the Society who were so widely scattered, and he felt sure that such an innovation would be a success.

Mr. BOOTH proposed, and Mr. WYNN LLOYD seconded, that a dinner be held in the near future and at a suitable centre on the North Wales coast.

The Secretary was instructed to obtain the opinion of members and make the necessary arrangements.

The PRESIDENT than called upon Mr. BOOTH to read his paper entitled: "Some Interesting Cases encountered during the last Forty Years."

Mr. BOOTH, who was applauded on rising, said he was glad to have the pleasure of relating to his colleagues some of his experiences of practice, and he intended to describe about half a dozen cases which had particularly impressed him.

[Mr. Booth's paper is reproduced in the Clinical and Case Reports Section of this issue of the *Record*.—Ed.]

Following the recital of these cases,

The PRESIDENT said they must feel deeply indebted to Mr. Booth for presenting to them such a varied collection of instructional cases. He himself had enjoyed listening to the paper very much, and he felt sure that the members would be glad to discuss the cases. He was pleased to see Mr. Davis among them that afternoon, after his return from New Zealand, and he hoped he would become a member of the Society. After touching upon some of the points in the paper, Professor Share Jones invited Mr. Davis to open the discussion.

Mr. DAVIS thanked the members for their welcome and congratulated Mr. Booth upon his interesting paper. He considered that such an account of cases as Mr. Booth had placed before them was valuable to both old and young practitioners. It was much better than a "hash up" of knowledge gathered from a text-book, and the little practical points were of great value to the young practitioner to add to his store of theory. Mr. Davis then gave his opinion on the cases described in the paper, terminating his remarks with an expression of thanks to Mr. Booth.

There followed an interesting discussion, in which most of the members took part, and Mr. SAVAGE then proposed, and the HON. SECRETARY seconded, a hearty vote of thanks to Mr. Booth for his informative paper. This was carried with acclamation.

Mr. BOOTH, after acknowledging the vote of thanks, briefly replied to the questions raised in the discussion. This terminated the meeting and the members then took tea together. HOWEL V. HUGHES, *Hon. Secretary.*

NOTES AND NEWS.

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events.

Aug. 31st to Sept. 6th.—N.V.M.A. Congress at Ayr.

April 1st.—Annual Fees due to R.C.V.S.
„ 8th.—N.V.M.A. Committee Meetings, 10 Gray's Inn Square, W.C.: Finance, 3-45 p.m.; Editorial, 4-30 p.m.
„ 9th.—N.V.M.A. Committee Meetings, 10 Gray's Inn Square: Appointments, 10 a.m.; Organising, 10-30 a.m.; Veterinary Officers' and Public Health, 11-15 a.m.; Joint Meeting Veterinary Officers' and Public Health and Parliamentary, 12 noon; Parliamentary, 12-30 p.m.
N.V.M.A. Council Meeting, 10 Red Lion Square, W.C., 3-30 p.m.
R.C.V.S. Committee Meetings.
„ 10th.—R.C.V.S. Committee Meetings: Registration and Parliamentary.
„ 11th.—R.C.V.S. Committee Meetings: Registration and Examination.
Meeting of the Central Division, N.V.M.A., 10 Red Lion Square, 6-30 p.m.
„ 12th.—R.C.V.S. Committee Meetings: Library and Finance Committees.
R.C.V.S. Council Meeting.
Organising Committee of International Veterinary Congress.
„ 30th.—Last day for payment of Annual Fees to R.C.V.S.
May 9th—R.C.V.S. Council Election—Last day for Nomination of Candidates.
„ 18th.—Entries due for D.V.S.M. Examination.
„ 23rd.—R.C.V.S. Annual Report and Voting Papers issued.
„ 30th.—R.C.V.S. Council Election—last day for receipt of Voting Papers.
June 6th.—R.C.V.S. Annual General Meeting.
„ 17th.—D.V.S.M. Examination commences in Edinburgh.
July 3rd.—R.C.V.S. Annual Dinner.
„ 4th—R.C.V.S. Committee Meetings.
„ 5th.—R.C.V.S. Council Meeting.
„ 9th.—R.C.V.S. Written Examinations.
„ 11th.—R.C.V.S. Oral Examinations begin.

Parliament and Public Abattoirs.

Mr. Whiteley asked the Minister of Health whether, in view of the difficulties arising in connection with the inspection of the carcases of animals killed in private slaughterhouses and the impracticability of the establishment of public abattoirs by the smaller local authorities, he was prepared to introduce legislation to make the establishment of public abattoirs the compulsory duty of each borough, urban, and rural district council, either individually or in combination with one or more of the councils of adjoining or neighbouring districts, and for the abolition of all private slaughterhouses upon the establishment of such abattoirs.

Mr. Chamberlain: No, sir. I do not contemplate the introduction of such legislation.

R.C.V.S. Obituary.

Bell, Thomas, Arbroath, Forfarshire. Graduated, N. Edinburgh, 25th January, 1884. Died, 20th March, 1929, aged 71.

Butters, Laurence, Upper Frederick Street, Liverpool. Graduated, London, 31st March, 1873. Died, 17th March, 1929, aged 80.

Carter, George William, "Stone Dene," Hyde Park, Knaresborough, Yorks. Graduated, March 30th, 1875, aged 75 years.

Mr. Carter was formerly in practice at Keighley, Yorkshire, for about forty years. He was many years veterinary surgeon to the Keighley Corporation, and also Chief Veterinary Inspector to the West Riding County Council.

"J. H. C.," in forwarding this notification of Mr. Carter's death, comments: "He was a great sportsman, and prominent Freemason, and was widely known throughout Yorkshire.

"He lived respected, and died regretted."

. . . . . .

Death of Mr. A. M. Munro.

"A well-known figure has been lost to Birkenhead by the death, early yesterday morning, at a nursing home after an operation, of Mr. Alexander M. Munro, one of the principal veterinary inspectors of the Ministry of Agriculture," says *The Liverpool Daily Post*, of March 25th.

"Mr. Munro, whose home was at 16 Willowbank Road, Devonshire Park, Birkenhead, was a popular official, and, in addition to supervising the Birkenhead and Wallasey lairages, visited all the landing-places for animals on the West Coast of England and Scotland, and also some of the ports on the East Coast. He had made Birkenhead his headquarters for over fifteen years. Mr. Munro, who was a member of the Royal College of Veterinary Surgeons, was a North of Scotland man and had a happy disposition. He and his family were members of St. Paul's Presbyterian Church, North Road, Birkenhead."

Foot-and-Mouth Disease at Anerley.

Order Affecting London.

The existence of foot-and-mouth disease was confirmed on Monday by the Ministry of Agriculture at Anerley, Penge, Kent. An Order has been issued, which is now in force, prohibiting the movement of animals in an area of approximately 15 miles radius round the infected premises.

The whole of London with the exception of the parishes of Poplar Borough, St. John at Hackney, and Stoke Newington, is included in the area, the movement of any animals in which contrary to the Order is an offence against the Diseases of Animals Act.

. . . . . .

In the House of Commons recently, Mr. A. Williams asked the Minister of Agriculture whether compensation for slaughter of animals is paid at the full rate in those cases where a farmer is fined for having failed to report an outbreak of foot-and-mouth disease on his farm promptly.

Mr. Guinness: Under Section 20 (7) of the Diseases of Animals Act, 1894, the Minister is empowered, if he thinks fit, to withhold, either wholly or partly, compensation in respect of an animal slaughtered by the Ministry where the owner or person having charge of the animal has, in the judgment of the Minister, been guilty in relation to the animal of an offence against the Act. Unless the circumstances in connection with a case are very exceptional, it is now the Ministry's usual practice to make a deduction from the compensation payable to an owner for each animal in respect of which the owner has been convicted for failing to report disease with all practicable speed.

Rugby Football.

(Dick) College Defeat London at Murrayfield.

Following a now well-established custom, the veterinary students of Edinburgh and London, at Murrayfield on March 16th, engaged in a miniature "international" prior to the more important affair in the afternoon. The Edinburgh forwards got the ball in most of the opening scrums, and with the backs handling smartly the visitors' defence was fully taxed to keep them out. After ten minutes (Dick) College were awarded a "free" for offside, and M'Laren kicked a good goal.

After some desultory play at midfield, a dodging run by M'Laren helped to place Edinburgh on the offensive again, but the visiting forwards, headed by Nicholson, relieved with a loose dribble. The movement was continued by Runciman, who broke away from a scrum with the ball at his feet, and dribbled to the home line.

The visitors were, however, still playing second fiddle in the tight scrums, and mainly due to this weakness they were unable to press home their attack. A cut through by Prentice was instrumental in changing the venue, and following this a handling movement in which all the backs participated saw M'Laren almost force his way over. Just before the interval Harvey had a couple of dashes for the visitors, but on each occasion he was safely tackled by Reid.

Half-time :—(Dick) Veterinary College, 1 penalty goal (3 pts.) ; Royal Veterinary College, 0.

The Edinburgh students were not long in augmenting their lead following the restart, Muir dribbling over for Downes, who was backing up well, to secure the touch. M'Laren failed with the easy kick. Immediately following this the visitors were awarded a free kick, and Peat landed play on the home line with a lovely kick. There was a spate of "frees" to the visitors hereabouts, and after Peele had struck the upright with one attempt at goal, he was successful with another in an easier position.

The Edinburgh students retaliated strongly, and from an opening made by Prentice, M'Laren ran over at the corner, after having shaken off an attempted tackle by Cundell. The kick failed. Another individual effort by Harvey raised the hopes of the visitors, but once again Reid proved a stimbling block. In the last ten minutes the home team outplayed their opponents, and Reid just failed with a drop at goal, while Urquhart lost a certain score by hanging on to the ball instead of passing out, after interpassing between Prentice and Oliver had spread-eagled the defence.

The Edinburgh students were a shade smarter in all divisions, and the result well represented the run of the game.

Result :—

Royal (Dick) Vet. College, 1 penalty goal 2 tries (9 pts.), Royal Vet. College, 1 penalty goal (3 pts.).

Royal (Dick) Veterinary College.—J. Reid ; G. G. M'Laren, A. S. Prentice, A. M. Urquhart, and A. Adamson ; T. Dunbar and G. Oliver ; J. Anderson, E. G. Wood, C. P. Downes, J. G. Speed, D. Daly, A. Mather, T. B. L. Muir, and A. M. Grant.

Royal Veterinary College (London).—F. L. Cundell ; P. J. Cautley, J. D. Peele, C. Peat and H. G. L. Harvey ; E. B. Ince and M. H. Clarke ; J. A. Nicholson, J. H. N. Hobday, J. P. G. Runciman, Hudson, Beynon, G. Peyton, A. Stevens, and A. J. Watts.

The game was most ably refereed by Mr. J. L. Stewart, a graduate of the (Dick) College, who is at present home on leave from West Africa. Not only was Mr. Stewart, in his day, captain of the (Dick) Fifteen, but later was the recipient of Scottish International honours.

An inter-collegiate Rugby match in the veterinary world is not merely a game, it is made an occasion of hospitable festivity. Following an afternoon return to the scene of the morning's endeavours, to witness the international match, the London party, which included Professor J. McCunn and Mr. Geoffrey Brook, were entertained to dinner by their successful rivals, who, for the occasion numbered amongst them the Principal, Dr. O. Charnock Bradley and Professors Mitchell and Graham. The good offices of the hosts did not end until even the most dilatory Londoner was safely entrained.

Meat Traders and Tuberculous Cattle.

The peril to public health of tuberculosis in cattle was discussed at the annual conference of the National Federation of Meat Traders' Associations, which concluded at Blackpool on Wednesday of last week.

Councillor John Edwards, of the London Association, moved a resolution appealing to the Government to initiate a policy for the eradication of tuberculosis from the herds similar to that which has been successfully pursued in Denmark, the United States and in Canada. The question, he said, was the most important of all matters affecting public health authorities. To-day England was a long way behind nearly all other countries. To rely on the Tuberculosis Order was to rest on a broken reed. There were roughly 3,000,000 head of cattle in England and Wales, and it was beyond dispute that of these more than a million would not stand up to the tuberculin test. Yet, last year, the Tuberculosis Order affected only 17,000 cattle. It was true that not all cows which reacted to the tuberculosis test gave infected milk, but it was equally true that, at some time or other, they would do so. Through the destruction of infected cattle farmers were losing millions each year and the butchers nearly a million. These sums, if capitalised, would provide enough money to eradicate the disease in seven years.

Mr. J. A. Sinclair, past president of the Scottish Federation, said that at the present time 3,000 children died each year from the bovine form of tuberculosis. There was ready in Scotland a practical constructive scheme which on the authority of the most eminent veterinary surgeons in the country, would free the herds from tuberculosis in 10 years at a cost of only £120,000 a year. There was no need for any public alarm. In Scotland, at any rate, the system of inspection was so thorough and uniform that not a single pound of meat from an infected animal was offered for sale.

The resolution was carried unanimously.

Liverpool University School of Veterinary Science.

Examination List, March, 1929.

Degree of B.V.Sc. : First Examination, *Part II.*—Jenkins, E. D.

Hay and Straw Packing.

"From the answer of the Minister of Agriculture in the House of Commons to a question relating to the risk of spreading foot-and-mouth disease through the hay and straw used for packing articles imported from the Continent, it would seem that stockowners will continue to be exposed to the risk of having their herds and flocks attacked and destroyed from infection brought in this way," says the Agricultural Correspondent of *The Times*. "In effect the interests of trade in commodities packed with straw or hay are considered to be so much more important than the health of our livestock that the latter must run whatever risk there is. Yet the United States, Canada, and Ireland, it is understood, safeguard their farming interests by more stringent restrictions upon the use of packing material from infected areas or countries. It is not a convincing argument that no recent outbreak has been traced to sources of this kind, since most of the cases have never been satisfactorily explained. The fact that in many instances the origin of the infection is wrapped in mystery hardly justifies the assumption that hay and straw from disease-infected countries can be exempted from blame. The disease comes in in the most perplexing and aggravating manner, and it is doubtful if this most probable means of communication has ever been tested."

XUM

CORRESPONDENCE.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

Sterility in Bloodstock.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—My attention has been drawn to, and opinion asked on, Mr. Willett's letter on p. 230 of your issue of the 16th inst.

I am very diffident, being very much a layman, of expressing any opinion in a scientific journal. Fortunately, my opinion is that no definite opinion on this subject can be expressed, and so I can say what I think. I hope your readers will recognise the subtle, but important, difference suggested.

Mr. Willett's letter implies that some age limit for travelling stallions is desirable, but that the present one of twenty years is too lenient. Now, anyone who has had considerable practical experience in managing stallions knows how tremendously the vigour of individual horses varies, also how some horses, just as humans, age much more quickly than others, though they may start life the more vigorous. That being so, it is obviously impossible for anyone to lay down a definite ruling as to when a premium stallion becomes too old to stand the physical strain of travelling some 75 to 110 miles a week, and covering from 40—90 mares per season. No one can foresee whether a horse will be in charge of a clever groom, whether the weather will be genial and not variable in March, April and May, whether the mares booked to the horse will be on the average old or young, well or ill managed. Some age had to be laid down, and the nice round figure of 20 was chosen. It is far too high for a delicate horse, with a bad groom, in an atmospherically changeable season, covering oldish mares. But it is none too high for a robust horse with all conditions favourable. Personally, I am for being as lenient as one reasonably can be in limiting the age; and for this reason. From the time the stallion covers his first mare—say at six years old, if he has been well tried as a racehorse—it is seven years before one can begin to judge reasonably if he is getting nice hunters, and many more before he can establish a reputation. Why, if he is fit, well, and wearing his years easily, debar him from the subsidy just when his value is being recognised at its full?

Mr. Willett also takes it for granted that lack of vitality in an old sire can be made up by mating him with a young mare. It would interest me very much to hear on what solid foundation he bases that supposition. Personally, I know of no evidence to substantiate it. Nor do I know of any evidence of prove that mating old mares with young stallions does away with the grave risk of breeding poor stock from old dams.

There are many old stallions which have bred good individuals, also a few old mares which have bred robust individuals, but I would remind students of this interesting problem that exceptions prove the rule, and that hard cases make bad laws.—Yours faithfully,

MERRIK R. BURRELL.

The Application of the Double Intradermal Test for Johne's Disease.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—The following clinical data, supplementary to the "Notes on the Application of the Double Intradermal Test for Johne's Disease," by my pupil, Mr. R. V. Isherwood, published in the *Veterinary Record* of March 23rd, may be of interest, as proving the reliability of the test.

The three-year-old cow, No. 2 in the chart quoted, although giving a definite reaction to the test on August 24th, showed no clinical symptoms whatever until December when she was well advanced in pregnancy, with her second calf. She then shewed some slight diarrhœa, loss of appetite and a staring coat. As she was a very valuable animal, having given over 1,000 gallons of milk in eleven months in her first lactation, treatment was attempted.

She was warmly housed and clothed, her oat and cake ration increased and a course of calcium chloride in malt prescribed.

At the suggestion of Major Dunkin, I got in touch with Professor Buxton, who very kindly supplied a series of graduated doses of a filtrate from a culture of Johne's bacillus, to use experimentally.

As pregnancy advanced the cow became very emaciated, the diarrhœa severe and chronic and in the third week in January she gave birth to a very puny dead calf and then collapsed herself, being destroyed by her owner as she was in a dying condition.—Faithfully yours,

DAVID ERIC WILKINSON.

4 The Terrace,
Woodford Green,
Essex.
March 25th, 1929.

Castration by the Burdizzo Method.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—This is the common method employed for the castration of cattle in India, and as it is desirable, from a working point of view, that these animals should become as fully developed as possible, the operation is often postponed until they are two years old, and it appears to be completely successful.

While stationed in India during the summer of 1927, I obtained permission to castrate 100 camels of an Indian Army transport unit by the Burdizzo method, as an experiment. I afterwards advocated this method being employed in Army units in place of the open method for the following reasons:—

(1) The operation could be done all the year round regardless of the presence or absence of flies. This is a great consideration, as these units are mostly employed in the cold weather, and flies are very plentiful in the summer.

(2) The animal would be at work from a week to ten days after the date of operation, as compared with an average of not less than three weeks following the open method.

(3) An enormous saving could be made in personnel and dressings by employing this method, as no after-treatment except exercise was necessary, whereas, after the open method, the daily dressings were both laborious and costly.

(4) No bad results were seen, whereas after the open method, no matter how carefully employed, healing was often considerably delayed, and cases of scirrhous cord sometimes occurred.

While no bad result appeared to follow castration by the Burdizzo method, a certain number of failures, either in one or both testicles, was recorded, but as the operation could be repeated if required, I consider the other advantages far outweighed those failures. The latter were entirely due to the camel's testicles being hung close to the perineal region, so making it most difficult to know when the cords were being correctly gripped.—Yours faithfully, J. J. B. TAPLEY,
Lt.-Colonel, R.A.V.C.

Headquarters,
British Troops in Egypt,
Cairo.
March 14th, 1929.

Milking Machines and Mastitis.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I would be much obliged if any of your readers would tell me if they think that milking machines are in some cases an indirect cause of mastitis. I know, of course, that some in-calf heifers get mastitis.—Yours truly,

GRAHAM REES-MOGG.

Clifford Manor,
near Stratford-on-Avon.
March 19th, 1929.

The Editor acknowledges the receipt of the following:—Communications from Messrs. R. H. Smythe (Camborne) and W. Robb (Glasgow).